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FILE COVERS 1907 - 30 Jan 2002 VOL 136 ISS 5

FILE LAST UPDATED: 29 Jan 2002 (20020129/ED)

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The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the H/Z/CA/CAplus files between 12/27/01 and 1/23/02. Use of the P indicator in online and SDI searches during this period, either directly appended to a CAS Registry Number or by qualifying an L-number with /P, may have yielded incomplete results. As of 1/23/02, the situation has been resolved. Also, note that searches conducted using the PREP role indicator were not affected.

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L6	1	SEA FILE=REGISTRY ABB=ON	"MAGNESIUM OXIDE"/CN
L7	1	SEA FILE=REGISTRY ABB=ON	"TIN OXIDE"/CN
L8	1	SEA FILE=REGISTRY ABB=ON	"STANNIC OXIDE (SNO2)"/CN
L9	1	SEA FILE=REGISTRY ABB=ON	"STANNOUS OXIDE"/CN
L10	1	SEA FILE=REGISTRY ABB=ON	PLATINUM/CN
L11	1	SEA FILE=REGISTRY ABB=ON	PALLADIUM/CN
L12	4	SEA FILE=REGISTRY ABB=ON	"MANGANESE OXIDE"/CN
L13	4	SEA FILE=REGISTRY ABB=ON	"IRON OXIDE"/CN
L14	11879	SEA FILE=HCAPLUS ABB=ON	CATAL?(5A)?LAYER?
L15	193477	SEA FILE=HCAPLUS ABB=ON	L6 OR L7 OR L8 OR L9 OR MGO OR SNO OR SNO2 OR (MAGNESIUM OR TIN OR STANNIC OR STANNOUS) (W)OXIDE
L16	522	SEA FILE=HCAPLUS ABB=ON	L14 AND L15
L17	464864	SEA FILE=HCAPLUS ABB=ON	L10 OR L11 OR PT OR PD OR PLATIN? OR PALLAD?
L18	218	SEA FILE=HCAPLUS ABB=ON	L16 AND L17
L19	196746	SEA FILE=HCAPLUS ABB=ON	L12 OR L13 OR MNO OR FEO OR FE2O3 OR (MANGANESE OR IRON OR FERRIC OR FERROUS) (W)OXIDE
L20	41	SEA FILE=HCAPLUS ABB=ON	L18 AND L19
L21	14	SEA FILE=HCAPLUS ABB=ON	L20 AND SUBSTRATE?

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09/607211

Page 2

L23 0 SEA FILE=HCAPLUS ABB=ON L20 AND LAYERING  
L24 3652 SEA FILE=HCAPLUS ABB=ON CATALYST?(6A) (MULTILAYER? OR LAYERED  
OR LAYERING OR LAYERS)  
L26 197781 SEA FILE=HCAPLUS ABB=ON L15 OR STANNIA OR MAGNESIA  
L27 12 SEA FILE=HCAPLUS ABB=ON L24 AND L26 AND L17 AND L19  
L28 41 SEA FILE=HCAPLUS ABB=ON L14 AND L26 AND L17 AND L19  
L29 19 SEA FILE=HCAPLUS ABB=ON L28 AND (MULTILAYER? OR LAYERS OR  
LAYERED OR LAYERING)  
L30 20 SEA FILE=HCAPLUS ABB=ON L23 OR L27 OR L29  
L31 4 SEA FILE=HCAPLUS ABB=ON L21 AND COATING?  
L32 22 SEA FILE=HCAPLUS ABB=ON L30 OR L31

=> file wpix

FILE 'WPIX' ENTERED AT 11:15:24 ON 30 JAN 2002

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FILE LAST UPDATED: 28 JAN 2002 <20020128/UP>  
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DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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=> d que

L6 1 SEA FILE=REGISTRY ABB=ON "MAGNESIUM OXIDE"/CN  
L7 1 SEA FILE=REGISTRY ABB=ON "TIN OXIDE"/CN  
L8 1 SEA FILE=REGISTRY ABB=ON "STANNIC OXIDE (SNO2)"/CN  
L9 1 SEA FILE=REGISTRY ABB=ON "STANNOUS OXIDE"/CN  
L10 1 SEA FILE=REGISTRY ABB=ON PLATINUM/CN  
L11 1 SEA FILE=REGISTRY ABB=ON PALLADIUM/CN  
L12 4 SEA FILE=REGISTRY ABB=ON "MANGANESE OXIDE"/CN  
L13 4 SEA FILE=REGISTRY ABB=ON "IRON OXIDE"/CN  
L15 193477 SEA FILE=HCAPLUS ABB=ON L6 OR L7 OR L8 OR L9 OR MGO OR SNO OR  
SNO2 OR (MAGNESIUM OR TIN OR STANNIC OR STANNOUS) (W)OXIDE  
L33 1581 SEA FILE=WPIX ABB=ON CATALYST?(6A) (MULTILAYER? OR LAYERED OR  
LAYERING OR LAYERS)  
L34 49660 SEA FILE=WPIX ABB=ON L15 OR STANNIA OR MAGNESIA  
L35 243344 SEA FILE=WPIX ABB=ON L10 OR L11 OR PT OR PD OR PLATIN? OR  
PALLAD?  
L36 36559 SEA FILE=WPIX ABB=ON L12 OR L13 OR MNO OR FEO OR FE2O3 OR  
(MANGANESE OR IRON OR FERRIC OR FERROUS) (W)OXIDE  
L37 1 SEA FILE=WPIX ABB=ON L33 AND L34 AND L35 AND L36  
L38 610 SEA FILE=WPIX ABB=ON L34 AND L35 AND L36  
L39 60 SEA FILE=WPIX ABB=ON L38 AND B01J?/IC  
L40 1 SEA FILE=WPIX ABB=ON L39 AND (MULTILAYER? OR LAYERS OR  
LAYERED OR LAYERING)  
L41 15 SEA FILE=WPIX ABB=ON L39 AND (CARRIER? OR SUBSTRATE?)  
L42 12 SEA FILE=WPIX ABB=ON L39 AND COAT?  
L43 5 SEA FILE=WPIX ABB=ON L41 AND L42  
L44 2 SEA FILE=WPIX ABB=ON L39 AND (TWO OR THREE OR 2 OR 3) (3A) (COAT

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? OR ?LAYER?)  
L46 7 SEA FILE=WPIX ABB=ON L37 OR L40 OR L43 OR L44  
L47 281 SEA FILE=WPIX ABB=ON COAT?(3A)SUBSTRATE?(3A)CATALY?  
L48 0 SEA FILE=WPIX ABB=ON L39 AND L47  
L49 0 SEA FILE=WPIX ABB=ON L38 AND L47  
L50 109 SEA FILE=WPIX ABB=ON L47 AND B01J?/IC  
L51 14 SEA FILE=WPIX ABB=ON L50 AND (TWO OR THREE OR 2 OR 3) (3A) (COAT  
? OR ?LAYER?)  
L52 11 SEA FILE=WPIX ABB=ON L50 AND (MULTILAYER? OR LAYERS OR  
LAYERED OR LAYERING)  
L53 27 SEA FILE=WPIX ABB=ON L46 OR L48 OR L49 OR L51 OR L52

=> dup rem l32 l53

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PROCESSING COMPLETED FOR L53  
L54 48 DUP REM L32 L53 (1 DUPLICATE REMOVED)

=> d l54 all 1-48

L54 ANSWER 1 OF 48 HCAPLUS COPYRIGHT 2002 ACS  
AN 2000:907143 HCAPLUS  
DN 134:58385  
TI Semiconductor gas sensors and gas detectors for selective detection of  
trace gas without interference  
IN Ohnishi, Hisao; Tabata, Soichi; Yokoyama, Kota  
PA Osaka Gas Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 17 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G01N027-12  
ICS G01N027-12  
CC 47-8 (Apparatus and Plant Equipment)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000356614	A2	20001226	JP 2000-110970	20000412
PRAI	JP 1999-104468	A	19990412		
AB	The gas sensor comprises an oxide semiconductor covered with a <b>multilayered catalyst layer</b> contg. larger amt. of Pt at the <b>catalyst layers</b> near to the surface side, than the <b>catalysts layers</b> near to the oxide semiconductor. The content, etc. of the Pt and its thickness distributions are further specified. Gas detectors comprising the sensor and giving elec. output signals are also claimed. Sensors for detection of trace methane without being interfered by other combustible gases were demonstrated.				
ST	semiconductor trace gas sensor interference free; methane gas sensor highly selective; <b>platinum catalyst</b> combustible gas sensor				
IT	Combustibles (gaseous, sensors for; semiconductor gas sensors and detectors with <b>platinum catalyst layers</b> having certain				

- concn. distribution for selective detection of trace gas without interference)
- IT Semiconductor gas sensors  
(semiconductor gas sensors and detectors with **platinum catalyst layers** having certain concn. distribution for selective detection of trace gas without interference)
- IT 7440-05-3, Palladium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses  
RL: CAT (Catalyst use); DEV (Device component use); USES (Uses)  
(**catalyst layers** contg.; semiconductor gas sensors and detectors with **platinum catalyst layers** having certain concn. distribution for selective detection of trace gas without interference)
- IT 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 13463-67-7, Titanium oxide, uses  
RL: CAT (Catalyst use); DEV (Device component use); USES (Uses)  
(catalyst support; semiconductor gas sensors and detectors with **platinum catalyst layers** having certain concn. distribution for selective detection of trace gas without interference)
- IT 74-98-6, Propane, analysis 106-97-8, Butane, analysis 1333-74-0, Hydrogen, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(decreased interference in trace methane detection; semiconductor gas sensors and detectors with **platinum catalyst layers** having certain concn. distribution for selective detection of trace gas without interference)
- IT 74-82-8, Methane, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(selective detection of; semiconductor gas sensors and detectors with **platinum catalyst layers** having certain concn. distribution for selective detection of trace gas without interference)
- IT 7440-06-4, Platinum, uses  
RL: CAT (Catalyst use); DEV (Device component use); USES (Uses)  
(semiconductor gas sensors and detectors with **platinum catalyst layers** having certain concn. distribution for selective detection of trace gas without interference)
- IT 1312-43-2, Indium oxide 1314-13-2, Zinc oxide, uses 1332-29-2, Tin oxide 1332-37-2, Iron oxide, uses 12024-21-4, Gallium oxide  
~~RL: DEV (Device component use); USES (Uses)  
(semiconductor oxide; semiconductor gas sensors and detectors with **platinum catalyst layers** having certain concn. distribution for selective detection of trace gas without interference)~~

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L54 ANSWER 2 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 2000:657791 HCAPLUS

DN 133:226971

TI Substrates and apparatus for decomposition of toxic or odor gases

IN Ohori, Shinichi

PA Sharp Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B01D053-86

ICS B01J021-06; B01J023-06; B01J023-08; B01J023-14; B01J023-16;  
B01J023-38; B01J023-72; B01J023-74; B01J035-02

CC 59-4 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 47, 67, 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000254449	A2	20000919	JP 1999-65452	19990311
AB	The title substrate contains photocatalytic layers from paints consisting of (1) primary photocatalytic powders from photocatalytic core powders carrying fine powders of metal or its oxide, which does not have photocatalytic property, (2) secondary photocatalytic powders with adsorption property, and (3) binders. The core powder may contain Ti, W, Mo, Si, In, Cd, Ga, Cr, Pb, Sn, their alloy, and/or their oxide. The finer powder may contain Cu, Ag, Fe, Co, Pt, Ni, Pd, Au, and/or their oxide. The substrate may contain adsorbents from SiO <sub>2</sub> gel, silicalite, activated C, and/or (metal-exchanged) zeolites. The binder may contain silicone polymer, fluoro polymer, colloidal silica, SiO <sub>2</sub> , or TiO <sub>2</sub> . The binder may contain solid basic substances such as CaO, CaCO <sub>3</sub> , K <sub>2</sub> O, and/or NaOH. The title app. has UV irradiation step to the substrates. The substrate and the app. are useful for deodorization of tobacco smoke, exhaust gases, and air.				
ST	gas deodorization titania photocatalyst adsorbent				
IT	Fluoropolymers, uses Polysiloxanes, uses RL: MOA (Modifier or additive use); USES (Uses) (binders; substrate coated with photocatalyst layer consisting of metal-carrying photocatalyst and adsorbent using binder for decompn. of toxic and odor gas)				
IT	Air purification (deodorization; substrate coated with photocatalyst layer consisting of metal-carrying photocatalyst and adsorbent using binder for decompn. of toxic and odor gas)				
IT	Adsorbents Air purification apparatus Exhaust gases (engine) Photolysis catalysts Tobacco smoke UV radiation (substrate coated with photocatalyst layer consisting of metal-carrying photocatalyst and adsorbent using binder for decompn. of toxic and odor gas)				
IT	Pentasil-type zeolites RL: DEV (Device component use); USES (Uses) (substrate coated with photocatalyst layer consisting of metal-carrying photocatalyst and adsorbent using binder for decompn. of toxic and odor gas)				
IT	Silica gel, uses Silicalites (zeolites) Zeolites (synthetic), uses RL: DEV (Device component use); PRP (Properties); USES (Uses) (substrate coated with photocatalyst layer consisting of metal-carrying photocatalyst and adsorbent using binder for decompn. of toxic and odor gas)				
IT	7440-44-0, Carbon, uses RL: DEV (Device component use); USES (Uses) (activated; substrate coated with photocatalyst layer consisting of metal-carrying photocatalyst and adsorbent using binder for decompn. of toxic and odor gas)				
IT	471-34-1, Calcium carbonate, uses 1305-78-8, Calcia, uses 1310-73-2, Sodium hydroxide, uses 12136-45-7, Potassium oxide, uses RL: MOA (Modifier or additive use); USES (Uses)				

- (reinforcement; substrate coated with photocatalyst layer consisting of metal-carrying photocatalyst and adsorbent using binder for decompn. of toxic and odor gas)
- IT 1306-19-0, Cadmium oxide, uses 1312-43-2, Indium oxide (In<sub>2</sub>O<sub>3</sub>)  
1313-99-1, Nickel oxide (NiO), uses 1314-08-5, Palladium oxide  
1314-35-8, Tungsten oxide, uses 1332-29-2, Tin  
oxide 1332-37-2, Iron oxide, uses  
1335-25-7, Lead oxide 1344-70-3, Copper oxide 7439-89-6, Iron, uses  
7439-92-1, Lead, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel,  
uses 7440-05-3, Palladium, uses 7440-06-4,  
Platinum, uses 7440-21-3, Silicon, uses 7440-22-4, Silver,  
uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-33-7,  
Tungsten, uses 7440-43-9, Cadmium, uses 7440-47-3, Chromium, uses  
7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-55-3, Gallium,  
uses 7440-57-5, Gold, uses 7440-74-6, Indium, uses 7631-86-9,  
Silica, uses 11098-99-0, Molybdenum oxide 11104-61-3, Cobalt oxide  
11118-57-3, Chromium oxide 11129-89-8, Platinum oxide  
12024-21-4, Gallium oxide 13463-67-7, Titania, uses 20667-12-3, Silver  
oxide (Ag<sub>2</sub>O) 39403-39-9, Gold oxide  
RL: CAT (Catalyst use); USES (Uses)  
(substrate coated with photocatalyst layer consisting of metal-carrying  
photocatalyst and adsorbent using binder for decompn. of toxic and odor  
gas)
- IT 7440-36-0, Antimony, uses  
RL: DEV (Device component use); USES (Uses)  
(substrate contg.; substrate coated with photocatalyst layer consisting  
of metal-carrying photocatalyst and adsorbent using binder for decompn.  
of toxic and odor gas)

L54 ANSWER 3 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 2000:37680 HCAPLUS

DN 132:80157

TI Vacuum cleaner bearing photolysis catalyst for air deodorization and  
disinfection and manufacture of the cleaner

IN Shimazaki, Noriko; Ishikawa, Takao; Ohishi, Tomoji; Kawaguchi, Takao;  
Hirota, Yuka; Ishikawa, Tetsuo; Sunagawa, Masao

PA Hitachi, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 23 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM A47L009-00

ICS A47L009-00; A47L009-10; A61L009-00; B01D053-86; B01J035-02

CC 47-2 (Apparatus and Plant Equipment)

Section cross-reference(s): 59, 67, 74, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000014607	A2	20000118	JP 1998-181011	19980626
AB	A box-like body forming a dust collecting chamber, or the members exposed to the daylight, or dust- and impurities-filtering members of this vacuum cleaner are coated with a photolysis catalyst layer. The material for the box-like body and the members to be coated with the photolysis catalyst layer may be a polymer contg. inorg. filler. The formation of the coating of the vacuum cleaner involves steps of applying a soln. contg. an organometallic compd. with a low mol. wt. and water to the surface of an object member, forming a pre-polymer of a metal oxide by irradiating electromagnetic waves and promoting hydrolysis of the organometallic compd., and drying the prepolymer. The photolysis catalyst layer may contain				

- TiO<sub>2</sub> fine powder together with Na, Li, K, Mg, Ca, Sr, and/or Zn and may further contain other elements and compds. Without requiring special maintenance work for maintaining the photocatalytic function, the vacuum cleaner can carry out deodorization and disinfection of air in an interior space during cleaning of the interior. Adhesion of relatively large dust and inorg. impurities to the vacuum cleaner due to electrostatic attraction is prevented.
- ST deodorization disinfection photocatalyst **coating** vacuum cleaner;  
filter vacuum cleaner photocatalyst **coating** titanate
- IT Air purification  
(deodorization; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT Air purification  
(disinfection; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT Polyesters, uses  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(film, photolysis catalyst **substrate**; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT Filters  
(of vacuum cleaners; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT Semiconductor materials  
(oxides, photolysis catalyst **coating** contg.; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT Acrylic polymers, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(photocatalytic **coating** contg.; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT Escherichia coli  
(photocatalytic disinfection; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT Alkali metals, uses  
~~Alkaline earth metals~~  
Clays, uses  
Platinum-group metals  
RL: MOA (Modifier or additive use); USES (Uses)  
(photolysis catalyst **coating** contg.; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT Photolysis catalysts  
(vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT Nonwoven fabrics  
(vacuum cleaner filter made of; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT Electric appliances  
(vacuum cleaners; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)

- IT 25038-59-9, Poly(ethylene terephthalate), uses  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(film, photolysis catalyst **substrate**; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT 9003-56-9, ABS 9011-14-7, Poly(methyl methacrylate)  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(filter cover made of, coated with photolysis catalyst; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT 74-93-1, Methylmercaptan, processes 75-07-0, Acetaldehyde, processes 7664-41-7, Ammonia, processes 7783-06-4, Hydrogen sulfide, processes  
RL: PEP (Physical, engineering or chemical process); REM (Removal or disposal); PROC (Process)  
(photocatalytic removal of; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- IT 409-21-2, Silicon carbide (SiC), uses 1302-93-8, Mullite 1308-38-9, Chromium sesquioxide, uses 1309-37-1, **Ferric oxide**, uses 1313-13-9, Manganese dioxide, uses 1313-99-1, Nickel monoxide, uses 1314-13-2, Zinc oxide, uses 1314-23-4, Zirconium dioxide, uses 1314-35-8, Tungsten trioxide, uses 1332-29-2, **Tin oxide** 1332-37-2, **Iron oxide**, uses 1344-28-1, Aluminum oxide, uses 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7440-02-0, Nickel, uses 7440-05-3, **Palladium**, uses 7440-06-4, **Platinum**, uses 7440-09-7, Potassium, uses 7440-16-6, Rhodium, uses 7440-22-4, Silver, uses 7440-23-5, Sodium, uses 7440-24-6, Strontium, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses 7440-70-2, Calcium, uses 7631-86-9, Silica, uses 11118-57-3, Chromium oxide 12033-89-5, Silicon nitride (Si<sub>3</sub>N<sub>4</sub>), uses 12047-27-7, Barium titanium oxide (BaTiO<sub>3</sub>), uses 12060-59-2, Strontium titanium oxide (SrTiO<sub>3</sub>) 12271-61-3, Cordierite 37220-25-0, Aluminum titanate  
RL: MOA (Modifier or additive use); USES (Uses)  
(photolysis catalyst **coating** contg.; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)
- 
- ~~IT 13463-67-7, Titanium oxide (TiO<sub>2</sub>), uses  
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(photolysis catalyst; vacuum cleaner comprising constituent members and filter coated with photolysis catalyst for air deodorization and disinfection during cleaning)~~

L54 ANSWER 4 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 2000:366079 HCAPLUS

DN 133:8455

TI Diesel exhaust gas treatment catalyst

IN Klein, Harald; Strehlau, Wolfgang; Lox, Egbert; Kreuzer, Thomas; Mueller, Wilfried

PA Degussa-Huels A.-G., Germany,

SO Ger. Offen., 18 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM B01J029-068



ICS .B01J029-12; B01J029-22; B01J029-44; B01D053-92  
 CC 59-3 (Air Pollution and Industrial Hygiene)  
 Section cross-reference(s): 51, 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19854794	A1	20000531	DE 1998-19854794	19981127
	EP 1004347	A2	20000531	EP 1999-122199	19991106
	EP 1004347	A3	20000830		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2000157870	A2	20000613	JP 1999-338142	19991129
PRAI	DE 1998-19854794	A	19981127		
AB	The catalyst, suitable for diesel exhaust gases, comprises two functional layers on an inert support; the first layer has nitrogen oxide storage capacity and the second, outer, layer has catalytic function as well as having a hydrocarbon storage capacity. The second layer comprises catalytically active Pt group metals (e.g., Pt or Pd) highly dispersed on a finely divided, acidic carrier such as aluminum silicate, silica, titania, or zirconia. The second layer also contains H-form zeolites as hydrocarbon storage agents, e.g., dealuminated Y zeolites, ZSM-5 zeolites, dealuminated mordenite, or their mixts. The nitrogen oxide storage material is a compd. selected from among those of alkali metals, alk. earth metals, and rare earth metals and may also contain oxides selected from among transition metals, such as Mn, Co, Cu, Zn, Sn, Pb, Zr, or their mixts. The nitrogen oxide storage material is supported on a carrier of cerium oxide or of a cerium zirconium oxide.				
ST	diesel exhaust gas catalyst storage material; nitrogen oxide removal diesel exhaust catalyst; hydrocarbon removal diesel exhaust catalyst; carbon monoxide removal diesel exhaust catalyst				
IT	Zeolites (synthetic), uses RL: CAT (Catalyst use); USES (Uses) (H-form; diesel exhaust gas treatment catalyst)				
IT	Oxidation catalysts Reduction catalysts (diesel exhaust gas treatment catalyst)				
IT	Alkali metals, uses Alkaline earth metals Dealuminated Y zeolites Platinum-group metals <del>Rare earth metals, uses</del> Transition metal oxides Zeolite ZSM-5 RL: CAT (Catalyst use); USES (Uses) (diesel exhaust gas treatment catalyst)				
IT	Hydrocarbons, processes RL: REM (Removal or disposal); PROC (Process) (diesel exhaust gas treatment catalyst)				
IT	Exhaust gases (engine) (diesel; diesel exhaust gas treatment catalyst)				
IT	Catalysts (three-way; diesel exhaust gas treatment catalyst)				
IT	12173-98-7, Mordenite RL: CAT (Catalyst use); USES (Uses) (dealuminated; diesel exhaust gas treatment catalyst)				
IT	1307-96-6, Cobalt oxide, uses 1309-60-0, Lead oxide 1313-13-9, Manganese oxide, uses 1314-13-2, Zinc oxide, uses 1317-38-0, Copper oxide, uses 1332-29-2, Tin oxide 1344-28-1, Alumina, uses 7440-05-3,				

Palladium, uses 7440-06-4, Platinum, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses 65453-23-8, Cerium zirconium oxide  
RL: CAT (Catalyst use); USES (Uses)  
(diesel exhaust gas treatment catalyst)  
IT 1306-38-3, Cerium oxide, reactions 1314-23-4, Zirconium oxide, reactions 1335-30-4, Aluminum silicate  
RL: CAT (Catalyst use); RCT (Reactant); USES (Uses)  
(diesel exhaust gas treatment catalyst)  
IT 141-43-5D, Ethanolamine, **platinum** complex 142-72-3, Magnesium acetate 543-80-6, Barium acetate 1304-28-5, Barium oxide, reactions 1312-81-8, Lanthanum oxide 7440-16-6, Rhodium, reactions 10099-59-9, Lanthanum nitrate 10102-05-3, **Palladium** nitrate 10108-73-3, Cerium nitrate 10139-58-9, Rhodium nitrate 20634-12-2  
RL: RCT (Reactant)  
(diesel exhaust gas treatment catalyst)  
IT 630-08-0, Carbon monoxide, processes 11104-93-1, Nitrogen oxide, processes  
RL: REM (Removal or disposal); PROC (Process)  
(diesel exhaust gas treatment catalyst)  
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE  
(1) Anon; DE 19614540 A1 HCAPLUS  
(2) Anon; DE 19742705 A1 HCAPLUS  
(3) Anon; EP 671211 A1 HCAPLUS

L54 ANSWER 5 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2000-412190 [35] WPIX

DNC C2000-124966

TI Depositing metal oxide coatings into substrate, for e.g. **catalyst**, involves treating surface with polyelectrolyte and aqueous slurry of metal oxide particles.

DC A97 H06 J04 L02 M13

IN LANZUELA DE ALVARO, F; MALDE, C N; PETCH, M I

PA (JOHO) JOHNSON MATTHEY PLC

CYC 88

PI WO 2000032311 A1 20000608 (200035)\* EN 12p B01J037-02 <--

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL  
OA PT SD SE SL SZ TZ UG ZW

W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB  
GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU

LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR  
TT UA UG US UZ VN YU ZA ZW

AU 2000013948 A 20000619 (200044) B01J037-02 <--

EP 1144117 A1 20011017 (200169) EN B01J037-02 <--

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI

ADT WO 2000032311 A1 WO 1999-GB3858 19991122; AU 2000013948 A AU 2000-13948 19991122; EP 1144117 A1 EP 1999-972945 19991122, WO 1999-GB3858 19991122

FDT AU 2000013948 A Based on WO 200032311; EP 1144117 A1 Based on WO 200032311

PRAI GB 1998-26486 19981203

IC ICM B01J037-02

AB WO 200032311 A UPAB: 20000725

NOVELTY - Metal oxide coatings are deposited into a substrate by treating a surface of the substrate with a polyelectrolyte to yield a surface coating of the polyelectrolyte; and subsequently or simultaneously treating the coated surface with an aqueous slurry comprising metal oxide particles.

USE - Used for depositing metal oxide coatings into a substrate, especially supported catalyst (claimed).

ADVANTAGE - It produces good coatings on substrates that have previously been difficult to coat, and in particular permits sound and adherent **two or multi-layer coatings**.

Dwg.0/1

FS CPI

FA AB

MC CPI: A04-D04A2; A11-B05; A11-C04B1; A12-M01; A12-W11K; H06-C03; J04-E03;  
J04-E04; L02-J01A; M13-B

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L54 ANSWER 6 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2000-478983 [42] WPIX

DNC C2000-144398

TI Surface hydrophilization method for glass and plastic substrates, involves forming catalyst layer containing titanium dioxide on substrate surface and impressing voltage on catalyst layer.

DC J04

PA (TTOC) TOTO LTD

CYC 1

PI JP 2000178529 A 20000627 (200042)\* 5p C09K003-00

ADT JP 2000178529 A JP 1998-355129 19981214

PRAI JP 1998-355129 19981214

IC ICM C09K003-00

ICS B01J035-02; C03C017-23

AB JP2000178529 A UPAB: 20000905

NOVELTY - A catalyst **layer** (2) containing titanium dioxide is formed on the substrate surface (1). Voltage is impressed on the catalyst layer.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for hydrophilic etchant.

USE - For glass and plastic substrate.

ADVANTAGE - The substrate of arbitrary sizes and shapes is hydrophilized easily and efficiently, by impressing voltage on catalyst layer **coated** on surface of **substrate**.

DESCRIPTION OF DRAWING(S) - The figure shows sectional view of the surface hydrophilization apparatus.

Substrate 1

Catalyst **layer** 2

Dwg.1/6

FS CPI

FA AB; GI

MC CPI: J04-E04

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L54 ANSWER 7 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 2000-458233 [40] WPIX

DNN N2000-342206 DNC C2000-139029

TI Coater for catalyst consists of device to supply a substrate and catalyst paste between a pair of coat application rolls.

DC J04 P42

PA (HITG) BABCOCK-HITACHI KK

CYC 1

PI JP 2000167415 A 20000620 (200040)\* 6p B01J037-02 <--

ADT JP 2000167415 A JP 1998-350930 19981210

PRAI JP 1998-350930 19981210

IC ICM B01J037-02

ICS B01J023-28; B01J035-06; B05C001-08; B05C009-10;  
B05D001-28; B05D007-24

AB JP2000167415 A UPAB: 20000823

NOVELTY - Coater of catalyst is provided with a device to supply a substrate and a catalyst paste (4) between a pair of coat application rolls (1, 2) and to form water vapor layer on the

boundary surface of the coat-application rolls, followed by providing touch of catalyst paste.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for coating method of a catalyst.

USE - Used for coating a catalyst.

ADVANTAGE - The coater is excellent in maintaining productivity at the time of manufacturing a tabular catalyst and the generation of industrial waste is prevented.

DESCRIPTION OF DRAWING(S) - The figure shows the explanatory drawing of the catalyst coater.

Top roll 1

Bottom roll 2

Catalyst paste 4

Dwg.1/5

FS CPI GMPI

FA AB; GI

MC CPI: J04-E04

L54 ANSWER 8 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:384727 HCAPLUS

DN 135:116030

TI The characterization of laser-deposited thin sensitive layers of gas sensors

AU Vrnata, Martin; Myslik, Vladimir; Vyslouzil, Filip; Jelinek, Miroslav; Lancok, Jan

CS Department of Physics, Institute of Chemical Technology, Prague, 166 28/6, Czech Rep.

SO ASDAM 2000, Int. EuroConf. Adv. Semicond. Devices Microsyst., Conf. Proc., 3rd (2000), 205-208. Editor(s): Osvald, Jozef. Publisher: Institute of Electrical and Electronics Engineers, New York, N. Y.

CODEN: 69BIDZ

DT Conference

LA English

CC 79-2 (Inorganic Analytical Chemistry)

AB The aim of this work is to study the properties of gas sensors with active layers prep'd. by pulsed laser deposition (PLD) technol. The active layers were deposited on planar sensor chips with interdigital Pt electrodes. The deposition was carried out from Sn dioxide (SnO2), In sesquioxide (In2O3), Sn acetylacetonate (SnAcAc) and In acetylacetonate (InAcAc)- based targets by KrF excimer laser. The authors' interest was focused to following problems: detection of H and ozone, the changes of maximal sensitivity Smax and the temp. of maximal sensitivity Tmax as a result of using dopants and catalyst, low-temp. (.apprx.100.degree.) sensitivities and ac-measurements of sensors (real and imaginary part of complex impedance for different frequencies).

ST laser deposition gas sensor; tin oxide gas sensor; indium oxide gas sensor; dopant oxide gas sensor; catalyst oxide gas sensor; acetylacetonate gas sensor

IT Catalysts

Dopants

Electric impedance

Semiconductor gas sensors

(characterization of laser-deposited thin sensitive layers of gas sensors)

IT Vapor deposition process

(laser ablation; characterization of laser-deposited thin sensitive layers of gas sensors)

IT 1333-74-0, Hydrogen, analysis 10028-15-6, Ozone, analysis

RL: ANT (Analyte); ANST (Analytical study)

(characterization of laser-deposited thin sensitive layers of gas

sensors)  
IT 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses  
7647-10-1, Palladium chloride (PdCl<sub>2</sub>)  
RL: CAT (Catalyst use); USES (Uses)  
(characterization of laser-deposited thin sensitive layers of gas  
sensors)  
IT 7440-06-4, Platinum, uses  
RL: DEV (Device component use); USES (Uses)  
(characterization of laser-deposited thin sensitive layers of gas  
sensors)  
IT 14405-45-9, Indium acetylacetonate 16009-86-2, Tin acetylacetonate  
RL: DEV (Device component use); NUU (Other use, unclassified); PEP  
(Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(characterization of laser-deposited thin sensitive layers of gas  
sensors)  
IT 1312-43-2P, Indium oxide (In<sub>2</sub>O<sub>3</sub>) 18282-10-5P, Tin  
oxide (SnO<sub>2</sub>)  
RL: DEV (Device component use); NUU (Other use, unclassified); PEP  
(Physical, engineering or chemical process); PNU (Preparation,  
unclassified); PREP (Preparation); PROC (Process); USES (Uses)  
(characterization of laser-deposited thin sensitive layers of gas  
sensors)  
IT 1304-28-5, Barium oxide (BaO), uses 1309-37-1, Ferric  
oxide, uses 1313-99-1, Nickel oxide (NiO), uses 1317-38-0,  
Cupric oxide, uses 14024-17-0, Iron acetylacetonate  
RL: MOA (Modifier or additive use); USES (Uses)  
(characterization of laser-deposited thin sensitive layers of gas  
sensors)  
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE  
(1) Myslik, V; J Appl Polym Sci 1999, V74, P1614 HCAPLUS  
(2) Sheng, J; Sensors and Actuators B 1997, V41, P131  
(3) Vrnata, M; Journal of Electrical Engineering 1998, V49, P340

L54 ANSWER 9 OF 48 HCAPLUS COPYRIGHT 2002 ACS  
AN 1999:468677 HCAPLUS  
DN 131:93928  
TI Electrocatalytically active non-carbon metal-based anodes for aluminum  
production cells  
IN De Nora, Vittorio  
PA Moltech Invent S.A., Luxembourg; De Nora, Vittorio

SO PCT Int. Appl., 18 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
IC ICM C25C003-12  
ICS C25C007-02  
CC 72-2 (Electrochemistry)  
Section cross-reference(s): 47, 56, 67

FAN.CNT 9

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9936592	A1	19990722	WO 1999-IB80	19990119
W:	AT, AU, BR, CA, CH, CN, CZ, DE, DK, ES, GB, GH, HU, ID, IN, IS, JP, KP, KR, MX, NO, NZ, PL, RO, RU, SE, SI, SK, TJ, TR, UA, US, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE			
US 6077415	A	20000620	US 1998-126206	19980730
US 6103090	A	20000815	US 1998-126114	19980730

	AU 9917796	A1	19990802	AU 1999-17796	19990119
	AU 739732	B2	20011018		
	EP 1049816	A1	20001108	EP 1999-900108	19990119
	R: DE, ES, FR, GB, IT, NL				
	NO 2000003703	A	20000719	NO 2000-3703	20000719
PRAI	WO 1998-IB80	A	19980120		
	WO 1998-IB81	A	19980120		
	US 1998-126114	A	19980730		
	US 1998-126206	A	19980730		
	WO 1999-IB80	W	19990119		
AB	A non-carbon, metal-based high temp. resistant anode of a cell for the prodn. of aluminum has a highly conductive metal-based <b>substrate</b> coated with one or more elec. conductive adherent intermediate protective <b>layers</b> and an outer layer which is elec. conductive and electrochem. active. The electrochem. active layer contains one or more electrocatalysts fostering the oxidn. of oxygen ions as well as fostering the formation of biat. mol. gaseous oxygen from the monoatomicnascent oxygen obtained by the oxidn. of the oxygen ions present at the surface of the anode in order to inhibit ionic and/or monoat. oxygen penetration. The intermediate layer(s) constitute(s) a substantially impermeable barrier to ionic, monoat. and/or biat. gaseous oxygen to prevent attack of the metal-based <b>substrate</b> . The electrocatalyst can be iridium, <b>palladium, platinum</b> , rhodium, ruthenium, silicon, tin, zinc, Mischmetal oxides and metals of the Lanthanide series. The applied layer usually comprises electrochem. active constituents selected from oxides, oxyfluorides, phosphides, carbides, in particular spinels such as ferrites.				
ST	electrocatalytically active noncarbon metal based anodes aluminum prodn cells				
IT	<b>Multilayers</b> (coating of electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)				
IT	<b>Anodes</b> (electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)				
IT	<b>Coating materials</b> (of electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)				
IT	<b>Corrosion</b> (of electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells during electrolysis)				
IT	<b>Heat treatment</b> (of electrocatalytically active non-carbon metal-based anodes with chromium-iron-nickel alloy intemediate layer for aluminum prodn. cells)				
IT	<b>Electrolysis</b> (of molten cryolite with electrocatalytically active non-carbon metal-based anodes)				
IT	<b>Slurries</b> (of nickel ferrite and inorg. polymer, use for formation in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells for conversion of monoat. oxygen to biat. mols.)				
IT	<b>Ferrites</b> RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses) (use for formation in outer layer on electrocatalytically active non-carbon metal-based anodes)				
IT	<b>Chromates</b> RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses) (use in intermediate layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)				
IT	<b>Electrolysis catalysts</b>				

- (use in outer **layer** on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT Oxides (inorganic), uses  
Rare earth metals, uses  
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)  
(use in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 10025-97-5, Iridium tetrachloride  
RL: PRP (Properties); RCT (Reactant)  
(addn. to slurry of nickel ferrite and inorg. polymer, for formation in outer layer on electrocatalytically active non-carbon metal-based anodes)
- IT 16833-27-5, Oxygen 2-  
RL: PRP (Properties); RCT (Reactant)  
(electrocatalytic oxidn. on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 7429-90-5P, Aluminum, properties  
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PRP (Properties); PREP (Preparation); PROC (Process)  
(electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 1308-38-9, Chromium oxide Cr<sub>2</sub>O<sub>3</sub>, properties  
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)  
(formation on chromium-iron-nickel alloy intermediate layer of electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells during heat treatment)
- IT 1314-23-4, Zirconium oxide, uses 1314-61-0, Tantalum pentoxide  
1332-29-2, Tin oxide 13463-67-7, Titanium oxide, uses  
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
(use as dopant for ferrites in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 11105-45-6 12649-48-8  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(use as intermediate layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 7440-02-0, Nickel, properties  
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)  
(use as protective **coating** for oxygen barrier layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- 
- IT 7440-50-8, Copper, uses  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(use as **substrate** in electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 12023-18-6, Iron molybdenum oxide Fe<sub>2</sub>MoO<sub>4</sub> 12052-28-7, Cobalt ferrite  
12063-10-4, Manganese ferrite 12063-19-3, Zinc ferrite 12068-86-9, Magnesium ferrite 12168-54-6, Nickel ferrite  
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)  
(use for formation in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 12013-31-9, Calcium Chromium oxide (CaCr<sub>2</sub>O<sub>4</sub>) 12016-69-2, Chromium cobalt oxide (Cr<sub>2</sub>CoO<sub>4</sub>) 12018-10-9, Chromium copper oxide (Cr<sub>2</sub>CuO<sub>4</sub>)  
12018-15-4, Chromium manganese oxide (Cr<sub>2</sub>MnO<sub>4</sub>)  
12018-18-7, Chromium nickel oxide (Cr<sub>2</sub>NiO<sub>4</sub>) 12018-19-8, Chromium zinc oxide (Cr<sub>2</sub>ZnO<sub>4</sub>) 12053-26-8, Chromium magnesium oxide (Cr<sub>2</sub>MgO<sub>4</sub>) 12068-77-8, Chromium iron oxide (Cr<sub>2</sub>FeO<sub>4</sub>)  
12344-99-9, Barium Chromium oxide (BaCr<sub>2</sub>O<sub>4</sub>) 12381-54-3, Chromium

strontium oxide (Cr<sub>2</sub>SrO<sub>4</sub>)  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(use in intermediate layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)  
IT 7439-88-5, Iridium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-21-3, Silicon, uses 7440-31-5, Tin, uses 7440-66-6, Zinc, uses 8049-20-5, Mischmetal  
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)  
(use in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)  
IT 1332-37-2, Iron oxide, uses 111419-81-9, Cerium fluoride oxide  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(use in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)  
IT 12645-46-4, Iridium oxide  
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)  
(use in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells for conversion of monoat. oxygen to biat. mols.)  
RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE  
(1) Eltech Systems Corporation; EP 0306101 A 1989 HCAPLUS

L54 ANSWER 10 OF 48 HCAPLUS COPYRIGHT 2002 ACS  
AN 1999:468676 HCAPLUS  
DN 131:93927  
TI Surface coated non-carbon metal-based anodes for aluminum production cells  
IN De Nora, Vittorio  
PA Moltech Invent S.A., Luxembourg  
SO PCT Int. Appl., 27 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
IC ICM C25C003-12  
ICS C25C007-02  
CC 72-2 (Electrochemistry)  
Section cross-reference(s): 56  
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9936591	A1	19990722	WO 1999-IB79	19990119
	W:	AT, AU, BR, CA, CH, CN, CZ, DE, DK, ES, GB, GH, HU, ID, IN, IS, JP, KP, KR, MX, NO, NZ, PL, RO, RU, SE, SI, SK, TJ, TR, UA, US, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE			
	US 6077415	A	20000620	US 1998-126206	19980730
	AU 9917795	A1	19990802	AU 1999-17795	19990119
	EP 1049815	A1	20001108	EP 1999-900107	19990119
	R:	DE, ES, FR, GB, IT, NL			
	NO 2000003704	A	20000719	NO 2000-3704	20000719
PRAI	WO 1998-IB81	A	19980120		
	US 1998-126206	A	19980730		
	US 1998-126359	A	19980730		
	WO 1999-IB79	W	19990119		
AB	A non-carbon, metal-based, high temp. resistant, elec. conductive and electrochem. active anode of a cell for the prodn. of aluminum has a metal-based oxidn.-resistant substrate to which an adherent				



- multi-layer coating is applied prior to its immersion into the electrolyte and start up of the electrolysis by connection to the pos. current supply. The multi-layer coating is obtainable from one or more applied layers selected from: a liq. soln., a dispersion in a liq. or a paste, a suspension in a liq. or a paste, and a pasty or non-pasty slurry, and combinations thereof, with or without heat treatment between two consecutively applied layers. At least one layer of the multi-layer coating contains a polymeric and/or a colloidal carrier. The coating is after final heat treatment elec. conductive and has during operation in the cell an electrochem. active surface for the oxidn. of oxygen ions present at the surface of the anode.
- ST surface coated noncarbon metal based anodes aluminum prodn cells
- IT Cathodes  
(aluminum-wettable, use in electrolytic cell for aluminum prodn.)
- IT Electrodes  
(bipolar; use in electrolytic cell for aluminum prodn.)
- IT Catalysts  
(electrocatalysts; use in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT Paints  
(in formation of active oxide layer of surface coated non-carbon metal-based anodes for aluminum prodn. cells using slurry contg.)
- IT Electrowinning  
(of aluminum in electrolytic cell with surface coated non-carbon metal-based anodes)
- IT Electrodeposition  
(of copper and nickel on non-carbon metal-based anodes for aluminum prodn. cells)
- IT Corrosion  
(of electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells during electrolysis)
- IT Electrolysis  
(of molten cryolite with electrocatalytically active non-carbon metal-based anodes)
- IT Oxidation, electrochemical  
(of oxygen ion on surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT Heat treatment  
(of surface coated non-carbon metal-based anodes for aluminum prodn. cells using slurry contg.)
- IT Fluorides, uses
- 
- RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(oxyfluorides; use multilayer coating of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT Group VA element compounds
- RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(phosphides; use multilayer coating of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT Slurries  
(polymeric slurry contg. nickel ferrite powder and nickel aluminate for formation of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT Cermets  
(substrate for surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT Alloys, uses  
Intermetallic compounds  
Metals, uses
- RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(substrate for surface coated non-carbon metal-based anodes

- for aluminum prodn. cells)
- IT Anodes  
Coating materials  
Multilayers  
(surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT Ferrites  
RL: CAT (Catalyst use); NUU (Other use, unclassified); PRP (Properties);  
USES (Uses)  
(use for formation in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT Dispersion (of materials)  
Suspensions  
(use for prepn. of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT Chromates  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(use in intermediate layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT Rare earth metals, uses  
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)  
(use in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT Oxides (inorganic), properties  
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)  
(use multilayer coating of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT Carbides  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(use multilayer coating of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT 7782-44-7, Oxygen, properties  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process)  
(electrooxidn. of oxygen ions on surface of coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT 11105-45-6  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(intermediate layer in surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- 
- IT 7440-50-8, Copper, uses  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(nickel plated; **substrate** and electrodeposit for formation of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT 12168-54-6, Nickel ferrite  
RL: FMU (Formation, unclassified); NUU (Other use, unclassified); PRP (Properties); FORM (Formation, nonpreparative); USES (Uses)  
(polymeric slurry contg. nickel ferrite powder and nickel aluminate for formation of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT 7440-02-0, Nickel, properties  
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)  
(**substrate** and electrodeposit for formation of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT 7439-89-6, Iron, properties 7439-98-7, Molybdenum, properties  
7440-25-7, Tantalum, properties 7440-47-3, Chromium, properties  
7440-48-4, Cobalt, properties  
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation,

- nonpreparative)  
(**substrate** for formation of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT 12606-02-9, Inconel 146729-81-9  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(**substrate** for formation of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT 7429-90-5P, Aluminum, properties  
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT 12645-46-4, Iridium oxide  
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)  
(surface coated non-carbon metal-based anodes for aluminum prodn. cells contg. electrocatalyst for rapid conversion of oxygen ions into mol. oxygen)
- IT 15096-52-3, Cryolite  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(testing of surface coated non-carbon metal-based anodes for aluminum prodn. cells in molten cryolite)
- IT 1308-38-9, Chromium oxide Cr2O3, properties  
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)  
(use as barrier layer in **multilayer** coating of surface coated non-carbon metal-based anodes for aluminum prodn. cells)
- IT 1314-23-4, Zirconium oxide, uses 1332-29-2, Tin oxide 11118-57-3, Chromium oxide 13463-67-7, Titanium oxide, uses  
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
(use as dopant for ferrites in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 537-00-8, Cerium acetate 1309-48-4, **Magnesia**, uses 1314-13-2, Zinc oxide, uses 1314-20-1, Thoria, uses 1314-36-9, Yttria, uses 1344-28-1, Aluminum oxide (Al2O3), uses 7631-86-9, Silica, uses 12057-24-8, Lithia, uses  
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)  
(use as dried colloids or polymer in **multilayer** coating on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 12052-28-7, Cobalt ferrite 12063-10-4, Manganese ferrite 12063-19-3, Zinc ferrite 12068-86-9, Magnesium ferrite  
RL: CAT (Catalyst use); NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(use for formation in outer layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 12009-92-6, Beryllium Chromium oxide (BeCr2O4) 12013-31-9, Calcium Chromium oxide (CaCr2O4) 12016-69-2, Chromium cobalt oxide (Cr2CoO4) 12018-10-9, Chromium copper oxide (Cr2CuO4) 12018-15-4, Chromium **manganese oxide** (Cr2MnO4) 12018-18-7, Chromium nickel oxide (Cr2NiO4) 12018-19-8, Chromium zinc oxide (Cr2ZnO4) 12053-26-8, Chromium **magnesium oxide** (Cr2MgO4) 12068-77-8, Chromium **iron oxide** (Cr2FeO4) 12344-99-9, Barium Chromium oxide (BaCr2O4) 12381-54-3, Chromium strontium oxide (Cr2SrO4)  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(use in intermediate layer on electrocatalytically active non-carbon metal-based anodes for aluminum prodn. cells)
- IT 7439-88-5, Iridium, uses 7440-05-3, **Palladium**, uses 7440-06-4, **Platinum**, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-21-3, Silicon, uses 7440-31-5, Tin, uses 7440-66-6, Zinc, uses 8049-20-5, Mischmetal

RL: CAT (Catalyst use); PRP (Properties); USES (Uses)  
(use in outer layer on electrocatalytically active non-carbon  
metal-based anodes for aluminum prodn. cells)

IT 10025-97-5, Iridium tetrachloride

RL: PRP (Properties); RCT (Reactant)  
(use in polymeric slurry contg. nickel ferrite powder and IrCl<sub>4</sub> for  
formation of surface coated non-carbon metal-based anodes for aluminum  
prodn. cells)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Eltech Systems Corporation; EP 0306101 A 1989 HCAPLUS

(2) Moltech Invent Sa; WO 9320026 A 1993 HCAPLUS

L54 ANSWER 11 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1999-495809 [42] WPIX

DNN N1999-369464 DNC C1999-145515

TI Dispersive coating of honeycomb catalyst  
substrate channels.

DC H06 J04 L02 P42 P64

IN BIRTIGH, G; DITTRICH, E; FOERSTER, M; HASSELMANN, W; HOFFMANN, M; LEIBOLD,  
W; MERGNER, B; SCHAFER, R; HOFFMAN, M; SCHAEFER, R

PA (DEGS) DEGUSSA-HUELS AG

CYC 35

PI EP 941763 A1 19990915 (199942)\* DE 13p B01J037-02 <--  
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI

DE 19810260 A1 19990916 (199944) B01J037-02 <--

AU 9920342 A 19990923 (199951) B05D007-24

ZA 9901899 A 19991124 (200001) 29p B01J000-00 <--

JP 11314041 A 19991116 (200005) 34p B01J037-02 <--

CA 2265071 A1 19990910 (200006) EN B01J037-02 <--

CN 1233533 A 19991103 (200011) B01J032-00 <--

DE 19810260 C2 20000224 (200014) B01J037-02 <--

CZ 9900732 A3 20000216 (200016) B05B013-06

BR 9903037 A 20000509 (200033) B01J037-025 <--

KR 99077742 A 19991025 (200052) B01J037-02 <--

US 6149973 A 20001121 (200101) B05D007-22

MX 9902322 A1 20000901 (200139) F01N003-28

AU 737238 B 20010816 (200153) B05D007-24

ADT EP 941763 A1 EP 1999-104520 19990306; DE 19810260 A1 DE 1998-19810260

19980310; AU 9920342 A AU 1999-20342 19990310; ZA 9901899 A ZA 1999-1899

19990309; JP 11314041 A JP 1999-62155 19990309; CA 2265071 A1 CA

1999-2265071 19990309; CN 1233533 A CN 1999-105613 19990309; DE 19810260

C2 DE 1998-19810260 19980310; CZ 9900732 A3 CZ 1999-732 19990303; BR

9903037 A BR 1999-3037 19990310; KR 99077742 A KR 1999-7887 19990310; US

6149973 A US 1998-146436 19980903; MX 9902322 A1 MX 1999-2322 19990310; AU

737238 B AU 1999-20342 19990310

FDT AU 737238 B Previous Publ. AU 9920342

PRAI DE 1998-19810260 19980310

IC ICM B01J000-00; B01J032-00; B01J037-02;

B01J037-025; B05B013-06; B05D007-22; B05D007-24; F01N003-28

ICS B01D053-86; B01J035-04; B05C007-04; B05C019-04; B28B011-04;

C04B041-45

ICA C04B041-87

AB EP 941763 A UPAB: 19991014

NOVELTY - The channels (1) are filled (11) from below, with a quantity up  
to 10% greater than their empty volume, until the dispersion rises above  
the upper surface (17). The excess is removed (8, 9) before emptying the  
channels. Impulsive suction from a low pressure vessel (5) connected with  
the lower end face of the substrate (1), then clears the passages. The

interval between starting to fill and completion of emptying, is no longer than 5 seconds.

DETAILED DESCRIPTION - Preferred Features: The (partial) vacuum vessel (5) has an initial pressure of 150 mbar and a volume 100-1000 times that of the catalyst substrate. During suction, a minimum air velocity of 5 m/s is maintained in the channels. The open flow cross section to the vacuum vessel is adjustable from 0 to a maximum value. When thixotropic or intrinsically-viscous dispersions are used, the interval between filling and sucking-out is so short, that the limit of flowability cannot set in. The substrate is moistened before coating and may be pre-impregnated with acids, bases or salt solutions. Following emptying of the flow channels, before firing, a flow of heated dry air at 50-80 deg. C is passed. This is delivered against the direction of emptying, at a speed of 2-10 m/s, over an interval of 2-60 seconds.

USE - To coat catalyst substrates using a dispersion.

ADVANTAGE - The substrate is coated with a reproducible quantity of dispersion every time. Based on dry mass, more than 200 g is coated per liter of catalyst volume. Substrates with cell densities up to 250 cm<sup>-2</sup> can be coated. Coating thickness is highly uniform in the axial- and radial directions. Blocked channels are positively prevented by sucking-out. The process has minimal sensitivity to rheological characteristics of the dispersion. Four quantified processing examples are described in the body of the disclosure.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic flow diagram.

Channels 1

Low pressure vessel 5

Line and pump 8, 9

Pump 11

Upper surface of catalyst substrate 17

Dwg. 1/1

FS CPI GMPI

FA AB; GI

MC CPI: H06-C03; J04-E04; L02-G; N06-C

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L54 ANSWER 12 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1998:197763 HCAPLUS

DN 128:313474

TI Sintered redox catalyst, porous catalyst, and their manufacture

IN Izawa, Toshio; Ohashi, Yoshiaki

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PA Towa Denka Kogyo K. K., Japan; Izawa, Toshio

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B01J023-89

ICS B01D053-86; B01J023-06; B01J023-20; B01J023-34; B01J023-50;  
B01J023-745

CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)

Section cross-reference(s): 59, 61

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10080638	A2	19980331	JP 1996-271245	19960906

AB The sintered redox catalyst is manufd. by (1) molding a mixt. of a dielec. substance sol and a semiconductive metal oxide sol and (2) firing at 700-1000.degree.. The obtained sintered catalyst is also claimed. The manufg. method of the porous catalyst involves the steps of (1) molding a mixt. of the sintered catalyst powders and a metal oxide (sol or powder)

- which may contain a **layered** compd. as a fraction filler, an auxiliary binder, and/or a foaming agent and (2) firing at 500-1000.degree.. The above method may involve the steps of soaking the porous catalyst powders into a metal salt soln. contg. **Pt**, **Au**, **Pd**, **Ru**, or **Ag** for metal deposition on the surface or pores of the powders. The obtained porous sintered catalyst is also claimed. The catalysts show high activity.
- ST dielec oxide sintered catalyst porous redox; semiconductive metal oxide sintered redox catalyst; water purifn sintered redox catalyst; air purifn sintered redox catalyst
- IT Air purification  
Redox reaction catalysts  
Semiconductor materials  
Water purification  
(sintered redox catalyst composed of dielec. substance and semiconductive metal oxide)
- IT Tourmaline-group minerals  
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(synthetic; sintered redox catalyst composed of dielec. substance and semiconductive metal oxide)
- IT 7664-38-2, Phosphoric acid, uses 206666-28-6  
RL: CAT (Catalyst use); MOA (Modifier or additive use); USES (Uses)  
(auxiliary binder; sintered redox catalyst composed of dielec. substance and semiconductive metal oxide)
- IT 1344-28-1, Alumina, uses 7631-86-9, Silica, uses  
RL: CAT (Catalyst use); USES (Uses)  
(binder, porous catalyst; sintered redox catalyst composed of dielec. substance and semiconductive metal oxide)
- IT 7440-44-0, Carbon, uses  
RL: CAT (Catalyst use); MOA (Modifier or additive use); USES (Uses)  
(foaming agent; sintered redox catalyst composed of dielec. substance and semiconductive metal oxide)
- IT 206666-27-5  
RL: CAT (Catalyst use); MOA (Modifier or additive use); USES (Uses)  
(**layered** compd.; sintered redox catalyst composed of dielec. substance and semiconductive metal oxide)
- IT 1317-38-0, Copper oxide, uses 12738-12-4, Niobate  
RL: CAT (Catalyst use); USES (Uses)  
(sintered redox catalyst composed of dielec. substance and semiconductive metal oxide)
- 
- IT 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-18-8, Ruthenium, uses 7440-22-4, Silver, uses 7440-57-5, Gold, uses  
RL: CAT (Catalyst use); MOA (Modifier or additive use); USES (Uses)  
(sintered redox catalyst composed of dielec. substance and semiconductive metal oxide)
- IT 1314-13-2, Zinc oxide, uses 1332-37-2, Iron oxide, uses 11129-60-5, Manganese oxide 12031-66-2, Lithium tantalate 12047-27-7, Barium titanate, uses 13463-67-7, Titanium oxide, uses 18282-10-5, Tin oxide (SnO2) 20667-12-3, Silver oxide  
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(sintered redox catalyst composed of dielec. substance and semiconductive metal oxide)
- IT 1318-00-9, Vermiculite 1318-93-0, Montmorillonite, uses 12269-78-2, Pyrophyllite 14807-96-6, Talc, uses  
RL: CAT (Catalyst use); MOA (Modifier or additive use); USES (Uses)  
(synthetic, **layered** compd.; sintered redox catalyst)

composed of dielec. substance and semiconductive metal oxide)

L54 ANSWER 13 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:650555 HCAPLUS

DN 127:323254

TI Titanium oxide-containing intercalation compound catalyst, its sintered porous product, and manufacture

IN Izawa, Toshiro; Ohashi, Yoshiaki

PA Towa Denka Kogyo K. K., Japan; Izawa, Toshio

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B01J023-38

ICS B01J021-16; B01J027-13

CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)

Section cross-reference(s): 78

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09253487	A2	19970930	JP 1996-108748	19960326

AB The catalyst comprises a layered compd. contg. Ti oxide and a metal. The sintered product comprises the catalyst and a metal oxide. The catalyst is manufd. by exchanging a part of ions of a layered compd. by Pd, Ag, or Be, introducing hydrated Ti oxide obtained by hydrolysis of an (in)org. Ti compd., drying, and heating at 400-1000.degree.. The catalyst is manufd. by introducing hydrated Ti oxide obtained by hydrolysis or hydronium exchange into a layered compd., filtrating, washing, drying, heating at .gtoreq.400.degree., adsorbing a metal complex anion of Pt, Pd, Ru, Au, Ag, or Be on the resulting porous powders, drying, and heating at 400-1000.degree. in a reducing atm. The sintered product is manufd. by molding a mixt. contg. the catalyst, a metal oxide as a binder, and a binder aid, drying, and heating at 400-1000.degree.. The catalyst showed improved chem. and thermal stability.

ST titanium oxide intercalation compd catalyst; platinum titanium oxide intercalation compd catalyst; palladium titanium oxide intercalation compd catalyst; ruthenium titanium oxide intercalation compd catalyst; gold titanium oxide intercalation compd catalyst; beryllium titanium oxide intercalation compd catalyst; silver titanium oxide intercalation compd catalyst

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IT Catalysts  
(titanium oxide- and metal-contg. intercalation compd. catalyst and its manuf.)

IT Intercalation compounds  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(titanium oxide- and metal-contg. intercalation compd. catalyst and its manuf.)

IT 1309-37-1, Iron oxide (Fe2O3), uses  
1314-13-2, Zinc oxide, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 21651-19-4, Tin oxide (SnO)  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(binder; titanium oxide- and metal-contg. intercalation compd. catalyst and its manuf.)

IT 7440-05-3DP, Palladium, intercalation compds.  
7440-06-4DP, Platinum, intercalation compds.  
7440-18-8DP, Ruthenium, intercalation compds. 7440-22-4DP, Silver,

intercalation compds. 7440-41-7DP, Beryllium, intercalation compds.  
7440-57-5DP, Gold, intercalation compds. 13463-67-7DP, Titanium oxide,  
intercalation compds. 56450-90-9DP, Magnesium sodium fluoride silicate  
(Mg<sub>5</sub>Na<sub>2</sub>F<sub>4</sub>(Si<sub>2</sub>O<sub>5</sub>)<sub>4</sub>), intercalation compds. 157453-26-4DP, Lithium  
magnesium fluoride silicate (LiMgF(Si<sub>2</sub>O<sub>5</sub>)), intercalation compds.  
197708-58-0DP, Magnesium sodium fluoride silicate  
(Mg<sub>2.67</sub>Na<sub>0.33</sub>F<sub>2</sub>(Si<sub>2</sub>O<sub>5</sub>)<sub>2</sub>), intercalation compds. 197708-59-1DP,  
intercalation compds.  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)  
(titanium oxide- and metal-contg. intercalation compd. catalyst and its  
manuf.)

L54 ANSWER 14 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:537396 HCAPLUS

DN 127:139556

TI CO gas detector and its manufacture

IN Kono, Takashi; Tanda, Akifumi; Mochizuki, Hakaru; Takashima, Hiromasa;  
Yasugata, Kazutoshi

PA Tokyo Gas Co., Ltd., Japan; Yazaki Corp.

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G01N027-409

CC 59-1 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 51, 72, 79

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09152416	A2	19970610	JP 1995-313997	19951201
AB	A solid electrolyte-type CO sensor for quant. detn. of CO in waste combustion gas from fossil fuels with high-reliability detection of incomplete combustion of combustors comprises a pair of modified electrodes manufd. by <b>coating</b> electrode materials of mixts. of (1) Pt-group metals and (2) O-2-conductive solid electrolytes (e.g., Pt and YSZ) on a <b>substrate</b> of O-2-conductive solid electrolyte and modified with .gtoreq.1 oxide of d-block transition metals chosen from 4th-period elements, 5th-period elements (except Ag and Cd), Re and Ir, and combustible gas oxidn. catalyst covered on one electrode.				
ST	carbon monoxide sensor combustion gas; transition metal modified electrode solid electrolyte				
IT	Air analysis Combustion gases (CO gas sensor and its manuf. with electrodes modified by d-block transition metals with <b>catalyst layer</b> )				
IT	Gas sensors (electrochem., solid-state; CO gas sensor and its manuf. with electrodes modified by d-block transition metals with <b>catalyst layer</b> )				
IT	Electrochemical sensors (gas, solid-state; CO gas sensor and its manuf. with electrodes modified by d-block transition metals with <b>catalyst layer</b> )				
IT	1313-96-8, Niobium oxide 1313-99-1, Nickel oxide, uses 1314-08-5, Palladium oxide 1314-13-2, Zinc oxide, uses 1332-37-2, Iron oxide, uses 1344-70-3, Copper oxide 7439-88-5, Iridium, uses 7439-89-6, Iron, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-03-1,				



Niobium, uses 7440-05-3, Palladium, uses 7440-15-5, Rhenium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-32-6, Titanium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses 11098-99-0, Molybdenum oxide 11099-11-9, Vanadium oxide 11104-61-3, Cobalt oxide 11113-84-1, Ruthenium oxide 11118-57-3, Chromium oxide 11129-60-5, **Manganese oxide** 12624-27-0, Rhenium oxide 12645-46-4, Iridium oxide 12680-36-3, Rhodium oxide  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(CO gas sensor and its manuf. with electrodes modified by)  
IT 630-08-0, Carbon monoxide, analysis  
RL: ANT (Analyte); POL (Pollutant); ANST (Analytical study); OCCU (Occurrence)  
(CO gas sensor and its manuf. with electrodes modified by d-block transition metals with **catalyst layer**)  
IT 1344-28-1, Alumina, uses 7440-57-5, Gold, uses 7631-86-9, Silica, uses 11129-18-3, Cerium oxide 18282-10-5, **Tin oxide** (snO2) 20667-12-3, Silver oxide  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts contg.; CO gas sensor and its manuf. with electrodes modified by d-block transition metals with layer of)  
IT 1305-78-8, Calcium oxide, uses 1314-23-4D, Zirconia, yttria-stabilized 1314-36-9D, Yttrium oxide, zirconia stabilized by 127276-94-2, Yttrium zirconium oxide (Y0.12Zr0.95O2.05)  
RL: DEV (Device component use); USES (Uses)  
(electrodes contg.; CO gas sensor and its manuf. with electrodes modified by d-block transition metals)  
IT 1309-48-4, **Magnesium oxide**, uses 7440-06-4, **Platinum**, uses  
RL: CAT (Catalyst use); DEV (Device component use); USES (Uses)  
(electrodes or catalysts contg.; CO gas sensor and its manuf. with electrodes modified by d-block transition metals)  
IT 13463-67-7, Titanium oxide, uses  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(electrodes or catalysts contg.; CO gas sensor and its manuf. with electrodes modified by d-block transition metals)

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L54 ANSWER 15 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1997-403501 [38] WPIX

DNC C1997-130327

TI Coating disc honeycomb catalyst substrate  
with dispersion - by spraying end faces with aqueous suspension whilst masking for supports, optionally applying **multilayers** of differing composition in rapid.

DC E36 H06 J01 J04

IN DOMESLE, R; ENGLER, B; LOX, E

PA (DEGS) DEGUSSA AG

CYC 1

PI DE 19547598 C1 19970828 (199738)\* 4p B01J037-02 <--

ADT DE 19547598 C1 DE 1995-19547598 19951220

PRAI DE 1995-19547598 19951220

IC ICM B01J037-02

ICS B01D053-86

AB DE 19547598 C UPAB: 19970922

In the new method, a dispersed coating is applied to flow channel walls in monolithic disc-shaped catalyst substrates. The substrates are of generally cylindrical section, penetrated by flow channels, and are coated

by a dispersion of fine particulate inorganic materials and/or their precursors. The improvement is coating by injection or spraying on the end faces of the substrate. The finely-divided material is a catalytic composition, a catalyst precursor; or an ab- or ad-sorbent material. Preferably, the substrate is partially covered during spraying. Coatings of differing composition are sprayed from both end faces, at least one being a catalyst. **Multilayers** are applied, each layer of the same or of differing composition, at least one being a catalyst. The device so formed is used for exhaust (or waste) gas cleaning.

USE - Used to make **catalyst-** or sorbent **coated substrates**, e.g. for exhaust gas cleaning.

ADVANTAGE - The method is simple and suitable for short, disc-shaped honeycomb substrates. Aqueous dispersions are particularly suitable. Other fluids, e.g. aqueous alcohol may be used for special purposes. Substrate lengths are e.g. 25-50 mm long. A number of (listed) parameters control the maximum length which can be successfully coated. Should a honeycomb cell be closed by the spray, it can be restored by vibrating, air blasting or suction. The coating is not necessarily continuous and uniform. It may be masked, where mountings will ultimately hold the substrate. This saves materials and significant cost. The thickness may be varied, suiting reactivity or flow requirements. A wide range of catalytic and substrate materials are suggested in the text. Ad- or absorbent functions may be designed-in.

Dwg.0/0

FS CPI

FA AB; DCN

MC CPI: E10-J02D; E11-Q02; E31-F01A; E31-H01; E31-N05B; E31-N05C; H06-C03;  
J01-E02B; J04-E04; N06-C

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L54 ANSWER 16 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:18415 HCAPLUS

DN 126:50560

TI Photolysis catalysts containing titanium oxide and their manufacture for deodorization of air

IN Shibahara, Kazuo; Nakano, Hideyuki; Takano, Toshikatsu

PA Nippon Insulation Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B01J035-02

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ICS B01J021-06; B01J033-00

CC 59-6 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 58, 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08243402	A2	19960924	JP 1995-48703	19950308
AB	The catalysts comprise TiO <sub>2</sub> and oxidn. accelerators, preferably simple substances, oxides, hydroxides, halides, and/or salts of transition, noble, and rare earth metals, e.g., Ni, Cr, Fe, Zn, Ti, Mn, Co, Mo, V, Sr, W, Pd, Au, Ag, Pt, La, Ce, Pr, Nd, Dy, Ho, Er, and Lu, on surface layers of inorg. curing materials. Preferably, the inorg. cured materials contain cement, synthetic Ca silicate, synthetic Mg silicate, and/or Mg carbonate. Optionally, surfaces of the catalysts have surface protective layers, preferably contg. inorg. oxides, e.g., SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Sb <sub>2</sub> O <sub>3</sub> , ZrO <sub>2</sub> , TiO <sub>2</sub> , SnO <sub>2</sub> , Fe <sub>2</sub> O <sub>3</sub> , CeO <sub>2</sub> , WO <sub>3</sub> , and/or MoO <sub>3</sub> , or fluororesins and/or silicone resins. The process comprises spreading TiO <sub>2</sub> and oxidn. accelerator powders on surfaces of inorg. moldings before curing and burying the				

- powders in the moldings by pressing. The catalysts are used for air deodorants in houses, offices, factories, etc., and building materials.
- ST photolysis catalyst titanium oxide oxidn accelerator; air deodorant photolysis catalyst titania; building material photolysis catalyst air deodorization
- IT Rare earth compounds  
Transition metal compounds  
RL: CAT (Catalyst use); USES (Uses)  
(hydroxides, oxidn. accelerators; photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- IT Portland cement  
RL: CAT (Catalyst use); USES (Uses)  
(inorg. curing materials; photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- IT Rare earth halides  
Rare earth oxides  
Rare earth salts  
Transition metal halides  
Transition metal oxides  
Transition metal salts  
RL: CAT (Catalyst use); USES (Uses)  
(oxidn. accelerators; photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- IT Air deodorization  
Deodorants  
Photolysis catalysts  
(photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- IT Fluoropolymers, uses  
Polysiloxanes, uses  
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)  
(surface protective layers for catalysts; photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- IT Hydroxides (inorganic)  
RL: CAT (Catalyst use); USES (Uses)  
(transition metal, oxidn. accelerators; photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- 
- IT 546-93-0, Magnesium carbonate 1343-88-0, Magnesium silicate  
RL: CAT (Catalyst use); USES (Uses)  
(inorg. curing materials; photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- IT 1344-95-2P, Calcium silicate  
RL: CAT (Catalyst use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(inorg. curing materials; photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- IT 26499-65-0, Plaster of paris  
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)  
(inorg. curing materials; photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)

- IT 7429-91-6, Dysprosium, uses 7439-89-6, Iron, uses 7439-91-0, Lanthanum, uses 7439-94-3, Lutetium, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-00-8, Neodymium, uses 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-10-0, Praseodymium, uses 7440-22-4, Silver, uses 7440-24-6, Strontium, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-45-1, Cerium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-52-0, Erbium, uses 7440-57-5, Gold, uses 7440-60-0, Holmium, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses 7761-88-8, Silver nitrate, uses 10028-22-5  
RL: CAT (Catalyst use); USES (Uses)  
(oxidn. accelerators; photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- IT 13463-67-7, Titanium dioxide, uses  
RL: CAT (Catalyst use); USES (Uses)  
(photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- IT 75-08-1, Ethanethiol  
RL: REM (Removal or disposal); PROC (Process)  
(photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)
- IT 1306-38-3, Cerium dioxide, uses 1309-37-1, Iron trioxide, uses 1309-64-4, Antimony oxide (Sb<sub>2</sub>O<sub>3</sub>), uses 1313-27-5, Molybdenum oxide (MoO<sub>3</sub>), uses 1314-23-4, Zirconium oxide (ZrO<sub>2</sub>), uses 1314-35-8, Tungsten oxide (WO<sub>3</sub>), uses 1344-28-1, Aluminum oxide (Al<sub>2</sub>O<sub>3</sub>), uses 7631-86-9, Silica, uses 18282-10-5, Tin oxide (SnO<sub>2</sub>)  
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)  
(surface protective layers for catalysts; photolysis catalysts contg. TiO<sub>2</sub> and oxidn. accelerators on inorg. substrates and their manuf. for air deodorization)

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L54 ANSWER 17 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1996:323374 HCAPLUS

DN 124:351284

TI Freon-decomposing and removing system

IN Kawagoe, Hiroshi; Sugano, Shuichi; Kato, Akira; Tamada, Shin

PA Hitachi Ltd, Japan

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SO Jpn. Kokai Tokkyo Koho, 5

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B01D053-86

ICS A62D003-00; B01D053-68

CC 59-4 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 08057255	A2	19960305	JP 1994-198170	19940823
AB	The system includes (1) 1st catalyst layers which decomp. Freons and absorb HF and/or HCl (generated by the decompn.), as the primary step, and (2) 2nd catalyst layers which decomp. the residual Freons. The catalyst layers may contain alkali absorbing layers to remove HF and/or HCl generated by decompn. of the Freon. Freon is effectively removed.				
ST	Freon decompn removal system; chlorofluorohydrocarbon decompn catalyst				

system  
IT Decomposition catalysts  
    (system for decompn. and removal of Freon)  
IT Hydrocarbons, processes  
    RL: PEP (Physical, engineering or chemical process); REM (Removal or disposal); PROC (Process)  
        (chloro fluoro, system for decompn. and removal of Freon)  
IT 1305-62-0, Calcium hydroxide, uses 1310-73-2, Sodium hydroxide, uses  
    RL: TEM (Technical or engineered material use); USES (Uses)  
        (absorbent for decompn. product; system for decompn. and removal of Freon)  
IT 1304-28-5, Baria, uses 1305-78-8, Calcia, uses 1307-96-6, Cobalt monoxide, uses 1309-48-4, Magnesia, uses 1313-13-9, Manganese dioxide, uses 1313-27-5, Molybdenum trioxide, uses 1313-96-8, Niobium oxide 1313-99-1, Nickel monoxide, uses 1314-23-4, Zirconia, uses 1314-35-8, Tungsten trioxide, uses 1317-38-0, Copper monoxide, uses 1344-28-1, Alumina, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-33-7, Tungsten, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses 20667-12-3, Silver oxide (ag2o)  
    RL: CAT (Catalyst use); USES (Uses)  
        (catalyst; system for decompn. and removal of Freon)  
IT 7647-01-0P, Hydrogen chloride, processes 7664-39-3P, Hydrogen fluoride, processes  
    RL: PNU (Preparation, unclassified); REM (Removal or disposal); PREP (Preparation); PROC (Process)  
        (decompn. product; system for decompn. and removal of Freon)

L54 ANSWER 18 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1996-435345 [44] WPIX

DNC C1996-136596

TI Vehicle catalytic converter and mfr. - has cellular substrate with first layer of palladium and second layer of platinum and rhodium..

DC H06 J04

IN KIRBY, C W

PA (GENK) GENERAL MOTORS CORP

CYC 5

PI EP 734757 A1 19961002 (199644)\* EN 10p B01D053-94

R: DE FR GB

AU 673493 B 19961107 (199701) F01N003-28

US 5593647 A 19970114 (199709) 8p F01N003-10

ADT EP 734757 A1 EP 1996-200316 19960212; AU 673493 B AU 1996-45506 19960214;

US 5593647 A US 1995-414839 19950331

FDT AU 673493 B Previous Publ. AU 9645506

PRAI US 1995-414839 19950331

REP EP 622107; US 4448756; US 4492769; US 5019546; WO 9500235; WO 9535152

IC ICM B01D053-94; F01N003-10; F01N003-28

ICS B01D053-34; B01J023-40

AB EP 734757 A UPAB: 19961104

Catalytic converter for a vehicle has a cellular substrate coated with a first layer of Pd and a second layer of Pt and Rh, the wt. ratio of first layer to second being 3-1.25:1 pref. 3-2:1. The prod. is mfd. by applying both layers as an aq. washcoat and then calcining at 400-550 deg. C.

ADVANTAGE - The converter provides improved emission conversion efficiency. The dual coating can be formed in one calcining step.

Dwg.0/4

FS CPI

FA AB

MC CPI: H06-C03; J01-E02D; J04-E02; J04-E04; N02-E02; N02-F02; N06-D

L54 ANSWER 19 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1995-274382 [36] WPIX

CR 1997-235137 [21]

DNC C1995-124472

TI Layered catalyst compsn. - comprises undercoat layer contg. a fine particulate refractory metal oxide and sol, and an overlayer contg. a supported refractory metal oxide.

DC E37 J04

IN DETTLING, J C; GALLIGAN, M P

PA (ENGH) ENGELHARD CORP

CYC 62

PI US 5422331 A 19950606 (199536)\* B01J023-34 &lt;--

WO 9523025 A1 19950831 (199540) 31p B01J037-02 &lt;--

RW: AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE SZ UG

W: AM AT AU BB BG BR BY CA CN CZ DE DK EE FI GB GE HU JP KE KG KP KR

KZ LK LR LT LU LV MD MG MN MW MX NL NO NZ PL PT RO RU SD SE SI SK

TJ TT UA UZ VN

AU 9518422 A 19950911 (199550) B01J037-02 &lt;--

EP 746411 A1 19961211 (199703) EN B01J037-02 &lt;--

R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

ADT US 5422331 A US 1994-202397 19940225; WO 9523025 A1 WO 1995-US1745

19950214; AU 9518422 A AU 1995-18422 19950214; EP 746411 A1 EP 1995-910237

19950214, WO 1995-US1745 19950214

FDT AU 9518422 A Based on WO 9523025; EP 746411 A1 Based on WO 9523025

PRAI US 1994-202397 19940225

REP FR 2215266; FR 2270002; FR 2462928; US 5114901; WO 9322050

IC ICM B01J023-34; B01J037-02

ICS B01D053-86; B01J023-44; C04B041-52

AB US 5422331 A UPAB: 19970530

~~Catalyst compsn. comprises a catalytic material coated~~~~on a substrate. The catalytic material comprises (a)~~

~~an under coat layer comprising a fine mixt. of a fine particulate refractory metal oxide and a sol selected from at least one of silica, alumina, zirconia and titania sols; and (b) an overlayer comprising a refractory metal oxide support on which is dispersed at least one catalytic metal component.~~

FS CPI

FA AB; DCN

MC CPI: E35; J04-E04; N02; N03

L54 ANSWER 20 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1995-316141 [41] WPIX

DNC C1995-140199

TI Planar catalyst-producing device - includes heater contacting upper and/or lower sheets facing substrate coated with catalyst paste.

DC J04

PA (HITG) BABCOCK-HITACHI KK

CYC 1

PI JP 07213920 A 19950815 (199541)\* 4p B01J037-02 &lt;--

ADT JP 07213920 A JP 1994-11623 19940203

PRAI JP 1994-11623 19940203

IC ICM B01J037-02

ICS B01J035-02

AB JP 07213920 A UPAB: 19951019

Planar catalyst-producing device includes a pair of coating rolls (4, 4A);

upper and lower sheets (3, 3A); heater (1) contacting the surface of at least one of the upper and lower sheets facing substrate (7) upon which catalyst paste (6) is coated; and a means (2) for recovering any catalyst paste attached to the heater.

ADVANTAGE - Catalyst paste attached to sheet can be recovered via the heater and the recovery means.

Dwg.1/2

FS CPI  
FA AB; GI  
MC CPI: J04-E; N06

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L54 ANSWER 21 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1995-316135 [41] WPIX

DNC C1995-140193

TI Catalyst for purifying exhaust gas and mfg. process for it - has metal substrate by platinum and a denitrifying catalyst layer..

DC E36 H06 J01

PA (HITG) BABCOCK-HITACHI KK

CYC 1

PI JP 07213914 A 19950815 (199541)\* 5p B01J035-02 <--

ADT JP 07213914 A JP 1994-12836 19940204

PRAI JP 1994-12836 19940204

IC ICM B01J035-02

ICS B01D053-86; B01D053-94; B01J023-652

AB JP 07213914 A UPAB: 19960422

Exhaust gas purifying catalyst has metal substrate (

2) coated by Pt component layer (3)

and denitrifying catalyser layer (4).

ADVANTAGE - Removing of NOx and CO, and reducing of elution of unreacted NH3, is achieved efficiently with a little using amount of the catalyst, by the process of this invention.

Dwg.1/1

FS CPI  
FA AB; GI; DCN  
MC CPI: E11-Q02; E31-H01; E31-N05B; E32-A02; E35-K04; H06-C03; J04-E04;  
N02-F02; N03-B01; N03-C01; N03-D02; N06-E

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L54 ANSWER 22 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1995-158059 [21] WPIX

DNC C1995-072791

TI Purificn. catalyst for exhaust gas - comprises substrate coated with prim.

layer contg. alumina and zirconia which is laminated with sec. later

contg. a specified perovskite oxide..

DC E19 E36 J01 J04

PA (CATA-N) CATALER IND CO LTD; (DAHM) DAIHATSU MOTOR CO LTD

CYC 1

PI JP 07080311 A 19950328 (199521)\* 8p B01J023-89 <--

ADT JP 07080311 A JP 1993-189196 19930630

PRAI JP 1993-189196 19930630

IC ICM B01J023-89

ICS B01D053-86; B01D053-94; B01J037-02

AB JP 07080311 A UPAB: 19950602

Substrate is coated with a prim. layer contg. alumina and zirconia and is laminated with a sec. layer contg. a perovskite oxide; Ln(1-x)AxMO3 where Ln = rare earth metal except for Ce, A = Ce or alkali earth metal, M = transition metal, x = 0-1. At least one of the two

layers is impregnated with a noble metal and composite oxide or solid soln. of Ce, Zr and pref. rare earth metal to form the catalyst.

ADVANTAGE - CO, HC and NOx in exhaust gas are removed efficiently even at high temps. (above 800 deg. C) using the catalyst.

In an example, cordierite honeycomb support is coated with alumina and composite oxide of ceria and zirconia and laminated with perovskite oxide shown as  $(\text{La}_{0.8}\text{Ce}_{0.2})(\text{Fe}_{0.6}\text{Co}_{0.4})\text{O}_3$  and ceria, where both layers are coated with Pd, to form a catalyst.

Dwg.0/6

FS CPI

FA AB; GI; DCN

MC CPI: E10-J02D; E11-Q02; E31-H01; E31-N05B; J01-E02D; J04-E04; N02; N02-F02; N03-A; N03-B02

L54 ANSWER ~~23 OF 48~~ WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1995-264691 [35] WPIX

DNC C1995-120568

TI Three-way catalyst for exhaust gas treatment - comprises rhodium, platinum and palladium, each supported on different catalyst support, and used as pellets or as wash-coat in **three layers** on honeycomb substrate.

DC H06 J04

IN PAPADAKIS, E G; PLIANGOS, C A; VAYENAS, C G; VERYKIOS, X E; YENTEKAKIS, I B; YENTEKAKIS, I V

PA (PAPA-I) PAPADAKIS E G; (PLIA-I) PLIANGOS C A; (VAYE-I) VAYENAS C G; (VERY-I) VERYKIOS X E; (YENT-I) YENTEKAKIS I B; (YENT-I) YENTEKAKIS I V

CYC 10

PI EP 665047 A1 19950802 (199535)\* EN 15p B01D053-94

R: BE DE DK ES FR GB GR IT NL SE

EP 665047 B1 19980826 (199838) EN B01D053-94

R: BE DE DK ES FR GB GR IT NL SE

DE 69412780 E 19981001 (199845) B01D053-94

ADT EP 665047 A1 EP 1994-600002 19940128; EP 665047 B1 EP 1994-600002 19940128; DE 69412780 E DE 1994-612780 19940128, EP 1994-600002 19940128

FDT DE 69412780 E Based on EP 665047

PRAI EP 1994-600002 19940128

REP EP 387611; EP 393612; EP 443765; FR 2595265; US 5232890; WO 9309146

IC ICM B01D053-94

ICS B01J023-56; B01J037-02

AB EP 665047 A UPAB: 19950905

A catalyst for automotive exhaust treatment and the treatment of industrial and power generation waste gases by three-way reactions of oxidn. of CO and light hydrocarbons and redn. of N oxides comprises dispersed Rh, Pd and Pt each supported on a different catalyst support.

The metal-support pairs are formulated in a macroscopically uniform catalyst which can be used in the form of pellets, applied as a wash-coat on the walls of the channels of a monolithic honeycomb-type substrate or formulated as **three separated layers** supported on a monolithic honeycomb-type substrate in the following sequence: upper layer of Pt/gamma-alumina (ceria, lanthanum oxide), intermediate layer of Rh/W-doped titania (ceria, lanthanum oxide) and lower layer of Pd/yttria-doped zirconia (ceria, lanthanum oxide).

The lower layer is in contact with the monolithic substrate which is made of cordierite or other suitable material and in which ceria and/or lanthanum oxide are added as catalyst promoters.

An appts. for exhaust gas treatment and contg. the catalyst is also claimed.

Rh is pref. supported on W-doped titania, Pd is pref. supported on yttria-doped zirconia, and Pt is pref. supported on gamma-alumina, or the metals are all supported on yttria-doped zirconia.

The catalyst is pref. used as a wash-coat deposited in the channels of a ceramic or metallic type support. The wash-coat pref. comprises the above **three layers**.

USE - For treatment of engine, industrial or power station exhaust



gases.

ADVANTAGE - Three-way catalyst requires smaller amt. of Pt gp. metals to achieve high activity and longer lifetime.

Dwg.0/6

FS CPI

FA AB

MC CPI: H06-C03; J04-E04

L54 ANSWER 24 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:152436 HCAPLUS

DN 126:232740

TI An exploration of surface modification of oxide thin films and its gas sensing properties

AU Dai, Guorui

CS Dep. Electron. Eng., Jilin Univ., Changchun, 130023, Peop. Rep. China

SO Proc. East Asia Conf. Chem. Sens., 2nd (1995), 159-162 Publisher:

International Academic Publishers, Beijing, Peop. Rep. China.

CODEN: 64AXA3

DT Conference

LA English

CC 79-2 (Inorganic Analytical Chemistry)

Section cross-reference(s): 51, 76, 80

AB The oxide thin films were fabricated onto silicon and ceramic substrates by using PECVD method. To improve gas sensing properties, usually a small amt. of a catalyst such as Pt, Pd is coated over the surface ~~SnO2 thin films~~. The surface morphologies and the structures of the oxide thin films were studied by XPS. Gas sensing properties of the thin films and its sensitive mechanism are discussed herein.

ST oxide tin iron multilayer gas sensor; catalyst contg oxide multilayer gas sensor; carbon monoxide detection multilayer gas sensor

IT Ceramics

(SnO2-Fe2O3 multilayer film on silicon or ceramic substrates for gas sensor)

IT Gasoline

RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)

(prepn. of catalyst-contg. SnO2-Fe2O3

multilayer film gas sensor for detection of)

IT 1309-37-1, Iron oxide (Fe2O3), uses

18282-10-5, Tin dioxide

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RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(SnO2-Fe2O3 multilayer film on silicon or ceramic substrates for gas sensor)

IT 7440-21-3, Silicon, uses

RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)

(SnO2-Fe2O3 multilayer film on silicon or ceramic substrates for gas sensor)

IT 7440-05-3, Palladium, uses 7440-06-4,

Platinum, uses

RL: CAT (Catalyst use); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(in SnO2-Fe2O3 multilayer film on silicon or ceramic substrates for gas sensor)

IT 7646-78-8, Tin tetrachloride, reactions 13463-40-6, Pentacarbonyl iron

RL: RCT (Reactant)

(in prepn. of SnO2-Fe2O3 multilayer film for gas sensor)

IT 7647-10-1, Palladium chloride 16941-12-1, Chloroplatinic acid

RL: RCT (Reactant)

(in prepn. of **catalyst-contg. SnO<sub>2</sub>-Fe<sub>2</sub>O<sub>3</sub>**

**multilayer film** for gas sensor)

IT 64-17-5, Ethanol, analysis 630-08-0, Carbon monoxide, analysis  
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)

(prepn. of **catalyst-contg. SnO<sub>2</sub>-Fe<sub>2</sub>O<sub>3</sub>**

**multilayer film gas sensor** for detection of)

L54 ANSWER 25 OF 48 HCAPLUS COPYRIGHT 2002 ACS DUPLICATE 1

AN 1994:512713 HCAPLUS

DN 121:112713

TI Inorganic porous articles as catalyst supports

IN Sako, Toshiji; Yokoyama, Masaru; Takahama, Koichi

PA Matsushita Electric Works Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C04B038-00

ICS B01D053-36; B01J021-16; B01J029-32

CC 49-4 (Industrial Inorganic Chemicals)

Section cross-reference(s): 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06107474	A2	19940419	JP 1992-256980	19920925
AB	The title articles are formed by inserting metal <b>catalyst</b> -supported inorg. pillars in the <b>interlayers</b> of inorg. <b>layered</b> compds., and the inorg. pillars are formed from composite oxide(s) contg. metals of different valances. The composite oxide(s) is: (1) .gtoreq.1 of CuO, ZnO, CdO, TiO <sub>2</sub> , <b>SnO<sub>2</sub></b> , V <sub>2</sub> O <sub>5</sub> , <b>Fe<sub>2</sub>O<sub>3</sub></b> , Fe <sub>3</sub> O <sub>4</sub> and WO <sub>3</sub> , and optionally (2) .gtoreq.1 of ZrO <sub>2</sub> , SiO <sub>2</sub> and Al <sub>2</sub> O <sub>3</sub> . The metal catalyst is <b>Pt</b> , Au, Ag, <b>Pd</b> , Ru, Rh, Cu, Ni, Mn and/or Co. The inorg. <b>layered</b> compds. are Na-montmorillonite, Ca-montmorillonite, synthetic smectite, synthetic mica, Na-taeniolite, Li-taeniolite, Na-hectorite and/or Li-hectorite.				
ST	inorg porous article catalyst support				
IT	Mica-group minerals, uses RL: USES (Uses) (intercalation compds., pillared, with inorg. oxides, natural and synthetic, as catalyst supports)				
IT	Smectite-group minerals RL: USES (Uses) (intercalation compds., pillared, with inorg. oxides, natural and synthetic, as catalyst supports)				
IT	Catalysts and Catalysis (supports, porous, composite oxide-pillared micas and smectites as)				
IT	1306-19-0D, Cadmium oxide, pillared intercalation complexes with micas or smectites 1309-37-1D, <b>Ferric oxide</b> , pillared intercalation complexes with micas or smectites 1314-13-2D, Zinc oxide, pillared intercalation complexes with micas or smectites 1314-23-4D, Zirconia, pillared intercalation complexes with micas or smectites 1314-35-8D, Tungsten oxide (WO <sub>3</sub> ), pillared intercalation complexes with micas or smectites 1314-62-1D, Vanadium pentoxide, pillared intercalation complexes with micas or smectites 1317-38-0D, Cupric oxide, pillared intercalation complexes with micas or smectites 1317-61-9D, <b>Iron oxide</b> (Fe <sub>3</sub> O <sub>4</sub> ), pillared intercalation complexes with micas or smectites 1344-28-1D, Aluminum oxide (Al <sub>2</sub> O <sub>3</sub> ), pillared intercalation complexes with micas or smectites 7631-86-9D, Silica, pillared intercalation complexes with micas or				

smectites 11075-35-7D, Titanium vanadium oxide, compds. with sodium montmorillonite 11113-92-1D, Tin vanadium oxide, pillared intercalation complexes with sodium-exchanged montmorillonite 12651-22-8D, Tin tungsten oxide, pillared intercalation complexes with sodium-exchanged montmorillonite 13463-67-7D, Titania, pillared intercalation complexes with micas or smectites 18282-10-5D, **Stannic**

**oxide**, pillared intercalation complexes with micas or smectites

RL: CAT (Catalyst use); USES (Uses)

(as catalyst supports)

IT 7439-96-5, Manganese, uses 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-22-4, Silver, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses

RL: CAT (Catalyst use); USES (Uses)

(catalyst, porous pillared clay minerals as supports for)

IT 1318-93-0D, Montmorillonite, pillared intercalation complexes with composite inorg. oxides 12020-86-9D, Taeniolite, pillared intercalation complexes with composite inorg. oxides 56450-86-3D, Sodium taeniolite, pillared intercalation complexes with composite inorg. oxides 68084-70-8D, Lithium hectorite, pillared intercalation complexes with composite inorg. oxides

RL: USES (Uses)

(porous, as catalyst supports)

L54 ANSWER 26 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1994:637617 HCAPLUS

DN 121:237617

TI Catalyst for purification of exhaust gases

IN Akama, Hiroshi; Masuda, Goji; Kanesaka, Hiroyuki; Kachi, Naoki

PA Nissan Motor, Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B01J023-40

ICS B01D053-36; B01J023-60; B01J023-62; B01J023-64; B01J023-89

CC 59-3 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 06198178	A2	19940719	JP 1992-348904	19921228
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	JP 3161113	B2	20010425		
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AB The catalyst comprises a honeycomb support successively coated with (A) 1- or 2 layers primer coating of inorg. material mainly contg. activated alumina contg. ~~gtoreq.1~~ selected from Pt, Pd, and Rh; and (B) top coating contg. an oxide of ~~gtoreq.1~~ metals selected from Al, Zr, Si, Ti, Fe, V, Mn, Zn, Co, Cu, Cr, Mo, Sn, Ni, and W. The catalyst shows high efficiency in around stoichiometric- and lean-burn air-fuel ratio region, and high activity at low-temp.

ST exhaust gas purifn catalyst

IT Catalysts and Catalysis

Exhaust gases

(exhaust gas-purifn. catalysts from supports successively coated with noble-metal-contg. activated alumina primer layers and metal oxide top layers)

IT 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses

RL: CAT (Catalyst use); USES (Uses)

- (primer layer component; exhaust gas-purifn. catalysts from supports successively coated with noble-metal-contg. activated alumina primer layers and metal oxide top layers)
- IT 1306-38-3, Cerium oxide (CeO<sub>2</sub>), uses 1318-23-6, Boehmite (Al(OH)O)  
RL: CAT (Catalyst use); USES (Uses)  
(primer layer from; exhaust gas-purifn. catalysts from supports successively coated with noble-metal-contg. activated alumina primer layers and metal oxide top layers)
- IT 1302-88-1, Cordierite 1344-28-1, Alumina, uses  
RL: CAT (Catalyst use); USES (Uses)  
(support; exhaust gas-purifn. catalysts from supports successively coated with noble-metal-contg. activated alumina primer layers and metal oxide top layers)
- IT 1308-06-1, Cobalt oxide (Co<sub>3</sub>O<sub>4</sub>) 1308-38-9, Chromium oxide (Cr<sub>2</sub>O<sub>3</sub>), uses  
1309-37-1, Iron oxide (Fe<sub>2</sub>O<sub>3</sub>), uses  
1313-29-7, Molybdenum oxide (Mo<sub>2</sub>O<sub>3</sub>) 1313-99-1, Nickel oxide (NiO), uses  
1314-13-2, Zinc oxide (ZnO), uses 1314-23-4, Zirconium oxide (ZrO<sub>2</sub>),  
uses 1314-35-8, Tungsten oxide (WO<sub>3</sub>), uses 1314-62-1, Vanadium oxide  
(V<sub>2</sub>O<sub>5</sub>), uses 1317-34-6, Manganese oxide (Mn<sub>2</sub>O<sub>3</sub>)  
1317-38-0, Copper oxide (CuO), uses 7631-86-9, Silicon dioxide, uses  
13463-67-7, Titania, uses 18282-10-5, Tin  
oxide (SnO<sub>2</sub>)  
RL: CAT (Catalyst use); USES (Uses)  
(top layer component; exhaust gas-purifn. catalysts from supports successively coated with noble-metal-contg. activated alumina primer layers and metal oxide top layers)
- 
- L54 ANSWER 27 OF 49 HCAPLUS COPYRIGHT 2002 ACS  
AN 1994:563238 HCAPLUS  
DN 121:163238  
TI Wastewater treatment by catalytic ozonization  
IN Shishida, Kenichi; Ikeda, Mitsuaki; Mitsui, Kiichiro; Sano, Kunio  
PA Nippon Catalytic Chem Ind, Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM C02F001-78  
CC 60-2 (Waste Treatment and Disposal)  
Section cross-reference(s): 67
- 
- FAN.CNT 1
- |    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|----|---|------|----------|-----------------|----------|
| PI | JP 06114387   | A2   | 19940426 | JP 1992-270326  | 19921008 |
| AB | The process comprises contacting wastewater contg. oxidizable materials with O <sub>3</sub> -contg. gases to oxidize a part of the materials in primary catalyst layers, wherein the gases are fed from an entrance between the primary catalyst layers and secondary catalyst layers, then feeding the treated wastewater into secondary catalyst layers to oxidize the residual materials and to decomp. unreacted sol. O <sub>3</sub> . The oxidizable materials may be COD and/or NH <sub>3</sub> . |      |          |                 |          |
| ST | ozonization wastewater catalyst   |      |          |                 |          |
| IT | Wastewater treatment<br>(ozonization, catalytic, unreacted ozone removal in)  |      |          |                 |          |
| IT | 1304-28-5, Barium oxide, uses 1305-78-8, Calcium oxide, uses<br>1306-38-3, Cerium oxide (CeO <sub>2</sub> ), uses 1307-96-6, Cobalt oxide (CoO), uses<br>1309-37-1, Iron oxide (Fe <sub>2</sub> O <sub>3</sub> ), uses<br>1309-48-4, Magnesium oxide, uses  |      |          |                 |          |

1313-13-9, Manganese oxide (MnO<sub>2</sub>), uses  
1313-99-1, Nickel oxide, uses 1314-11-0, Strontium oxide, uses  
1314-13-2, Zinc oxide, uses 1314-23-4, Zirconia, uses 1314-35-8,  
Tungsten oxide, uses 1317-38-0, Copper oxide (CuO), uses 1344-28-1,  
Alumina, uses 7439-88-5, Iridium, uses 7440-05-3,  
Palladium, uses 7440-06-4, Platinum, uses  
7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-22-4, Silver,  
uses 7440-57-5, Gold, uses 7631-86-9, Silica, uses 12018-79-0,  
Copper iron oxide 12627-93-9, Iron strontium oxide  
13463-67-7, Titania, uses 37368-09-5, Titanium zirconium oxide  
52337-09-4, Silicon titanium oxide 152008-29-2, Cerium titanium  
zirconium oxide 157466-71-2, Barium magnesium nickel oxide  
(Ba<sub>0.11</sub>Mg<sub>0.23</sub>Ni<sub>0.66</sub>O) 157466-72-3, Manganese strontium zinc oxide  
(Mn<sub>0.15</sub>Sr<sub>0.12</sub>Zn<sub>0.76</sub>O<sub>1.15</sub>) 157466-73-4, Calcium cobalt tungsten oxide  
(Ca<sub>0.41</sub>Co<sub>0.56</sub>W<sub>0.03</sub>O<sub>1.06</sub>)

RL: CAT (Catalyst use); USES (Uses)

(catalysts contg., for ozonization of wastewater)

IT 7664-41-7, Ammonia, miscellaneous

RL: REM (Removal or disposal); PROC (Process)

(removal of, from wastewater, by catalytic ozonization)

IT 10028-15-6, Ozone, miscellaneous

RL: MSC (Miscellaneous)

(wastewater treatment with, Catalysts for)

L54 ANSWER 28 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1993:455122 HCAPLUS

DN 119:55122

TI Catalysts for diesel exhaust gas treatment

IN Ito, Yukari

PA Toyota Motor Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B01J023-89

ICS B01D053-36; B01J023-40; B01J023-56; B01J023-58; B01J023-62;

B01J023-64; B01J037-02

CC 59-3 (Air Pollution and Industrial Hygiene)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 05057191	A2	19930309	JP 1991-231862	19910911
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PRAI JP 1991-163036 19910703

AB The catalysts, for removing hydrocarbons, CO, and sol. org. fractions from diesel exhaust gases, comprise an active Al<sub>2</sub>O<sub>3</sub> layer on a monolithic honeycomb support, a layer of Al<sub>2</sub>O<sub>3</sub>, TiO<sub>3</sub>, and/or SiO<sub>2</sub> contg. .gtoreq.1 oxides of Mn, Co, Sn, Fe, Ca, Ni, Ce, Zr, Mg, and Cu coated on the active Al<sub>2</sub>O<sub>3</sub> layer.

ST catalyst diesel exhaust gas treatment; carbon monoxide removal diesel exhaust; hydrocarbon removal catalyst diesel exhaust

IT Exhaust gases

(carbon monoxide and hydrocarbons removal from from, catalysts for)

IT 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesia,  
uses 1313-99-1, Nickel oxide, uses 1314-23-4, Zirconia, uses

1332-29-2, Tin oxide 1332-37-2,

Iron oxide, uses 1344-70-3, Copper oxide 7631-86-9,

Silica, uses 11104-61-3, Cobalt oxide 11129-18-3, Cerium oxide

11129-60-5, Manganese oxide 13463-67-7,

Titania, uses

RL: USES (Uses)

(catalyst supports contg., for diesel exhaust gas treatment)  
IT 1344-28-1, Alumina, uses 7440-06-4, Platinum, uses  
RL: CAT (Catalyst use); USES (Uses)  
(catalyst, with multilayer supports, for diesel  
exhaust gas treatment)  
IT 630-08-0, Carbon monoxide, miscellaneous  
RL: REM (Removal or disposal); PROC (Process)  
(removal of, from diesel exhaust gases, catalysts for)

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L54 ANSWER 29 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 1993-116819 [14] WPIX  
CR 1989-139371 [19]  
TI Hydrogen sulphide-suppressing catalyst system for car - comprising  
substrate coated with undercoat of oxide(s) of manganese, nickel or iron  
and top-coat comprising three-way catalyst material.  
DC H06 J04  
IN DETTLING, J C; MOONEY, J J; TAUSTER, S  
PA (ENGH) ENGELHARD CORP  
CYC 1  
PI US 5196390 A 19930323 (199314)\* B01J021-04 <--  
ADT US 5196390 A CIP of US 1987-116598 19871103, Cont of US 1990-532008  
19900601, Cont of US 1991-644697 19910122, US 1992-899015 19920615  
FDT US 5196390 A CIP of US 4939113  
PRAI US 1987-116598 19871103; US 1990-532008 19900601; US 1991-644697  
19910122; US 1992-899015 19920615  
IC ICM B01J021-04  
ICS B01J021-06; B01J023-10; B01J023-64;  
B01J023-89  
FS CPI  
FA NOAB  
MC CPI: H06-C03; J01-E02D; J04-E; N02-A01; N02-C01; N02-E; N02-F02; N03-E

L54 ANSWER 30 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 1993-329330 [42] WPIX  
DNN N1993-254278 DNC C1993-145561  
TI Non toxic metal contg. catalytically active coating - used self-cleaning  
coating on ovens, cookers and grills.  
DC J04 L01 M13 Q74  
IN VOSS, E; WEIGAND, M  
PA (MERE) MERCK PATENT GMBH  
CYC 6

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PI EP 565941 A1 19931020 (199342)\* EN 3p B01J037-02 <--  
R: BE DE FR GB NL  
DE 4212691 A1 19931216 (199351) 3p B01J035-02 <--  
JP 06049660 A 19940222 (199412) 4p C23D005-00  
EP 565941 B1 19970528 (199726) EN 5p B01J037-02 <--  
R: BE DE FR GB NL  
DE 69310989 E 19970703 (199732) B01J037-02 <--  
ADT EP 565941 A1 EP 1993-105251 19930330; DE 4212691 A1 DE 1992-4212691  
19920416; JP 06049660 A JP 1993-87367 19930414; EP 565941 B1 EP  
1993-105251 19930330; DE 69310989 E DE 1993-610989 19930330, EP  
1993-105251 19930330  
FDT DE 69310989 E Based on EP 565941  
PRAI DE 1992-4212691 19920416  
REP EP 220509; EP 453897; GB 2096593; US 3460523; US 4147835  
IC ICM B01J035-02; B01J037-02; C23D005-00  
ICS A47J027-00; A47J037-01; B01J002-00; B01J021-16;  
B01J023-74; B01J037-04; B01J037-08;  
C03C008-14; C09C001-00; F24C014-00; F24C015-00  
AB EP 565941 A UPAB: 19931202

Catalytically active coating composition comprises an enamel frit, inert substances, and as oscillation catalyst a platelet-shaped substrate coated with metal oxides.

The enamel frit is premilled, mixed with the inert substances, this mixture is milled wet and catalyst added in an amount 1-50 percent by weight. The coating is applied to the metal substrate in aqueous suspension by the two-layer/two-firing or two-layer/single-firing process.

USE/ADVANTAGE - A catalytically active enamel for coating metal substrates, such as steel for continuously self-cleaning coatings on cookers, ovens etc. with advantages of not contg. any toxic heavy metal/heavy metal oxide as oxidation catalyst, but with high catalytic activity.

Dwg.0/0

FS CPI GMPI

FA AB

MC CPI: J04-E; L01-H06; M13-J, N06

L54 ANSWER 31 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1992:599377 HCAPLUS

DN 117:199377

TI Conversion of carbon monoxide using mixed transition metal oxide catalysts

IN Augustine, Robert L.; Tanielyan, Setrak

PA Morris, Philip, Products Inc., USA

SO Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM B01J037-02

CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 499402	A1	19920819	EP 1992-300999	19920206
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, PT, SE				
	US 5258340	A	19931102	US 1991-656306	19910215
	CA 2061066	AA	19920816	CA 1992-2061066	19920212
	FI 9200617	A	19920816	FI 1992-617	19920213
	NO 9200589	A	19920817	NO 1992-589	19920214
	JP 05092140	A2	19930416	JP 1992-61235	19920214
PRAI	US 1991-656306		19910215		

AB Catalysts for the oxidn. of CO and methods of prepg. these catalysts are described. The catalysts are prepd. using a sequential pptn. process which generates catalysts that contain substantially

layered metal oxides, both supported and unsupported, and possibly a noble metal or mixt. of noble metals layered on the metal

ST transition metal oxide carbon monoxide oxidn; catalysts carbon monoxide oxidn; smoking article carbon monoxide oxidn catalyst

IT Tobacco smoke and smoking

(articles for, transition metal oxide catalysts for carbon monoxide oxidn. for)

IT Transition metal oxides

RL: CAT (Catalyst use); USES (Uses)

(catalysts contg., for carbon monoxide oxidn.)

IT Ceramic materials and wares

Zeolites, uses

RL: USES (Uses)

(supports, for transition metal oxide catalysts for carbon monoxide oxidn.)

IT Oxidation catalysts  
(transition metal oxide, for carbon monoxide conversion)

IT Transition metals, uses  
RL: CAT (Catalyst use); USES (Uses)  
(noble, catalysts contg., for carbon monoxide oxidn.)

IT Paper  
(porous, supports, for transition metal oxide catalysts for carbon monoxide oxidn.)

IT 1308-06-1, Cobalt oxide (Co3O4) 1314-13-2, Zinc oxide, uses  
1332-37-2, Iron oxide, uses 1344-70-3,  
Copper oxide 7439-88-5, Iridium, uses 7440-04-2, Osmium, uses  
7440-05-3, Palladium, uses 7440-06-4,  
Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium,  
uses 7440-22-4, Silver, uses 7440-57-5, Gold, uses 11098-99-0,  
Molybdenum oxide 11099-02-8, Nickel oxide 11118-57-3, Chromium oxide  
13463-67-7, Titanium oxide, uses 18282-10-5, Tin dioxide  
39318-18-8, Tungsten oxide  
RL: CAT (Catalyst use); USES (Uses)  
(catalyst contg., for carbon monoxide oxidn.)

IT 630-08-0, Carbon monoxide, reactions  
RL: RCT (Reactant)  
(oxidn. of, transition metal oxide catalysts for)

IT 7440-44-0, Carbon, uses  
RL: USES (Uses)  
(porous, support, for transition metal oxide catalysts for carbon monoxide oxidn.)

IT 124-38-9P, Carbon dioxide, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, from carbon monoxide, transition metal oxide catalysts for)

IT 7631-86-9, Silicon dioxide, uses  
RL: USES (Uses)  
(support, for transition metal catalysts for carbon monoxide oxidn.)

L54 ANSWER 32 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1992-398754 [48] WPIX

DNC C1992-176877

TI Catalyst composite for hydrocarbon oligomerisation - comprises water-gas shift catalyst covered with thin zeolitic layer which has Fischer-Tropsch catalyst on its outer surface.

DC E17 H04 J04

IN DALLA, BETTA R A; GUTH, F; LOFFLER, D G; SCHUBERT, P F

PA (CATA-N) CATALYTICA INC

CYC 36

PI WO 9219574 A1 19921112 (199248)\* EN 24p C07C002-02

RW: AT BE CH DE DK ES FR GB GR IT LU MC NL OA SE

W: AT AU BB BG BR CA CH CS DE DK ES FI GB HU JP KP KR LK LU MG MN MW  
NL NO PL RO RU SD SE US

AU 9218920 A 19921221 (199311) C07C002-02

ADT WO 9219574 A1 WO 1992-US3601 19920501; AU 9218920 A AU 1992-18920  
19920501, WO 1992-US3601 19920501

FDT AU 9218920 A Based on WO 9219574

PRAI US 1991-694200 19910501; US 1991-724994 19910701; US 1991-751198  
19910829; US 1991-791737 19911108

REP US 3468815; US 4579830

IC ICM C07C002-02

ICS B01J029-04

AB WO 9219574 A UPAB: 19931116

(A) a catalyst component comprises a support of silica, alumina, zirconia and/or thoria substantially covered by a layer of zeolite. (B) a catalyst composite comprises a water-gas shift catalyst dispersed on its outer



surface. (C) oligomerisation of hydrocarbons involves contacting a lower mol. wt. hydrocarbon and steam with (B). The support of (A) is silica or alumina and the zeolite is US4, Si-rich mordenite, Si-rich affritite, zeolite omega, ZSM-5, silicalite, zeolite X and/or zeolite Y, and is in a layer of 2-10nm thick. The Fischer-Tropsch catalyst of (B) is Co and a promoter which is Re, Ru, Pd, Pt, ThO<sub>2</sub>, ZnO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, MgO, and/or MnO, pref. Re or Ru.

(B) additionally comprises a support which is silica, alumina, zirconia, and/or thoria and additionally contains Li, Na, Mg and/or Ca. The water-gas shift catalyst is Fe, Cu or Zn.

USE/ADVANTAGE - Catalyst has high surface area while providing a water gas-shift function. The zeolite allows short-chain hydrocarbons and steam into the water-gas shift catalyst and the return of the CO and H prods. back to the Fischer-Tropsch catalyst at its outer surface.

FS CPI  
FA AB; DCN  
MC CPI: E10-J02C1; E31-P02B; E31-P03; E34-C01; E34-E; E35; H04-E; H04-F02E;  
J04-E04; N02; N03; N06-A

L54 ANSWER 33 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1993-022751 [03] WPIX

DNN N1993-017516 DNC C1993-010288

TI Oxidn. catalyst - contg Gp-IB, Gp-VA, Gp-VIA, Gp-VIIA or Gp-VIII element or oxide supported on a honeycomb zirconium and titanium composite oxide or other honeycomb base material.

DC J04 Q73

PA (MITO) MITSUBISHI HEAVY IND CO LTD

CYC 1

PI JP 04349937 A 19921204 (199303)\* 6p B01J023-40 <--

ADT JP 04349937 A JP 1991-121215 19910527

PRAI JP 1991-121215 19910527

IC ICM B01J023-40

ICS B01J021-06; B01J023-22; B01J023-34;

B01J023-64; B01J023-78; B01J023-89;

F23C011-00

AB JP 04349937 A UPAB: 19931119

A zirconium and titanium composite oxide is used as a carrier.

At least one of the metals of a periodic gp. Ib, Va, VIA, VIIA, or VIII element or its oxide and an alkali earth element are supported on the carrier. The zirconium and titanium composite oxide is either formed into honeycomb shape or the oxidn. catalyst is coated on

a honeycomb-shaped heat-resistant base material selected from a crystalline composite oxide comprising cordierite, mullite, or MgO, Al<sub>2</sub>O<sub>3</sub>, and TiO<sub>2</sub>.

The periodic gp. Ib, Va, VIA, VIIA, of VIII element or its oxide is pref. CuO, V<sub>2</sub>O<sub>5</sub>, Cr<sub>2</sub>O<sub>3</sub>, MnO<sub>2</sub>, Fe<sub>2</sub>O<sub>3</sub>, NiO, CoO, PdO, Pt

, Pd, Rh, or Ru. The oxide of the alkali earth element is pref.

MgO, CaO, or BaO.

USE/ADVANTAGE - The oxidation catalyst is used for burning a gas, including hydrogen, carbon monoxide, or hydrocarbon. The oxidation catalyst features high activity, and superior heat resistance

Dwg.0/0

FS CPI GMPI

FA AB

MC CPI: J04-E04; N02; N03

L54 ANSWER 34 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1993-022749 [03] WPIX

DNC C1993-010286

TI Oxidn. catalyst for burning gas e.g. hydrogen - comprises e.g. GP-IB metal

and alkaline earth metal oxide supported on titanium and aluminium composite oxide **carrier** formed into honeycomb.

DC J04

PA (MITO) MITSUBISHI HEAVY IND CO LTD; (RYOM-N) RYOMEI GIKEN KK

CYC 1

PI JP 04349935 A 19921204 (199303)\* 6p B01J021-06 &lt;--

ADT JP 04349935 A JP 1991-125907 19910529

PRAI JP 1991-125907 19910529

IC ICM B01J021-06

ICS B01J021-16; B01J023-22; B01J023-34;  
B01J023-40; B01J023-64; B01J023-78

AB JP 04349935 A UPAB: 19931119

A Ti and Al composite oxide is used as a **carrier**. At least one Gp., Ib, Va, VIa, VIIa, or VIII metal or its oxide and an oxide of an alkaline earth element are supported on the **carrier**. The composite oxide is formed into a honeycomb. Alternatively, the oxidn. catalyst is **coated** on a honeycomb-shaped heat-resistant base material selected from a crystalline composite oxide comprising cordierite, mullite, or MgO, Al<sub>2</sub>O<sub>3</sub>, and TiO<sub>2</sub>.

Pref. metal or its oxide comprises CuO, V<sub>2</sub>O<sub>5</sub>, Cr<sub>2</sub>O<sub>3</sub>, MnO<sub>2</sub>, Fe<sub>2</sub>O<sub>3</sub>, NiO, CoO, PdO, Pt, Pd, Rh, or Ru. The oxide of the alkaline earth element comprises MgO, CaO, or BaO.

USE/ADVANTAGE - Used for burning a gas, including H<sub>2</sub>, Co or hydrocarbon. The oxidn. catalyst has high activity and good heat resistance. Dwg. 0/0

FS CPI

FA AB

MC CPI: J04-E04; N02, N03

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L54 ANSWER 35 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1990-225082 [30] WPIX

DNC C1990-097163

TI Applying precious metal catalyst to ceramic support - by using antimony-doped tin oxide interlayer to improve adhesion.

DC H06 J04

IN GERHARZ, G; SCHULER, C

PA (ALLM) ASEA BROWN BOVERI A

CYC 3

PI DE 3900571 A 19900719 (199030)\*

JP 02229548 A 19900912 (199043)

US 4983261 A 19910108 (199105)

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ADT DE 3900571 A DE 1989-3900571 19890111; JP 02229548 A JP 1990-2629  
19900111; US 4983261 A US 1989-455144 19891222

PRAI DE 1989-3900571 19890111

IC B01D053-36; B01J023-38; B01J027-14; B01J037-03

; C03C017-24; C04B041-88; C25D003-59; C25D005-54

AB DE 3900571 A UPAB: 19930928

A precious metal (cpd.) catalyst layer is applied onto a ceramic support by (a) forming an electrically conductive ceramic interlayer by pyrolytic deposition of an antimony-doped tin oxide layer on the support surface and heat treatment at 700 deg.C to incorporate the antimony in the crystal lattice of the tin oxide and to sinter the tin oxide to the support; and (b) electrodepositing the catalyst layer onto the interlayer.

USE/ADVANTAGE - The supported catalyst is used for i.c. engine exhaust gas conversion. An adherent, non-exfoliating coating is produced even on bodies of complicated shape in a simple, reproducible and inexpensive manner.

0/0

FS CPI

FA AB

MC CPI: H06-C03; J01-E02D; J04-E04

L54 ANSWER 36 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1988-199075 [29] WPIX

DNC C1988-088833

TI Catalyst for exhaust gas purificn. with carrier coating - contg. lanthanum and cerium oxide in concn. and ratio preventing lanthanum aluminate formation.

DC H06 J04

IN MATSUMOTO, S; MIYOSHI, N; SATO, M

PA (CATA-N) CATALER KOGYO KK; (TOYT) TOYOTA JIDOSHA KK

CYC 6

PI DE 3743626 A 19880714 (198829)\* 7p

JP 63162043 A 19880705 (198833)

AU 8782974 A 19880707 (198841)

US 4808564 A 19890228 (198911) 5p

DE 3743626 C 19900830 (199035)

JP 06075676 B2 19940928 (199437)

B01J023-56 &lt;--

ADT DE 3743626 A DE 1987-3743626 19871222; JP 63162043 A JP 1986-310638 19861224; US 4808564 A US 1987-129850 19871208; JP 06075676 B2 JP 1986-310638 19861224

FDT JP 06075676 B2 Based on JP 63162043

PRAI JP 1986-310638 19861224

IC B01D053-36; B01J021-04; B01J023-10; B01J032-00

ICM B01J023-56

ICS B01D053-36; B01J021-04; B01J023-10;

B01J032-00

AB DE 3743626 A UPAB: 19930923

Catalyst for exhaust gas purificn. has a support, a catalyst carrier coating and catalyst components. The novelty is that the catalyst carrier coating contains La and Ce oxides, the La molar fraction is 0.05-0.20 w.r.t. total rare earth metal atoms and the ratio of total rare earth metal atoms to Al atoms is 0.05-0.25.

Pref. the metal atoms in the coating are 1.0-2.5 mol.% La, 15-30 mol.% Ce and 83.5-77.5 mol.% Al. The ratio of total rare earth metal atoms to Al atoms is 0.07-0.15 if the coating contains La and Ce and 0.08-0.15 if it contains La or Ce. The coating pref. contains La, Ce, Nd and Sm oxides.

USE/ADVANTAGE - The catalyst is useful for purifying waste gases from (vehicle) i.c. engines. It has excellent durability at high temp., avoids the formation of La AlO3 at high temps. and retains the properties of Ce and La oxide.

FS CPI

FA AB

MC CPI: H06-C03; J01-E02D; J04-E04; N02-E; N02-F02; N03-A

L54 ANSWER 37 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1987-257497 [37] WPIX

DNC C1987-109020

TI Metallic semi-finished product - with columnar crystalline surface for improved coating adhesion.

DC J04 M26 M27 P53

IN BEHR, F; FLEISCHER, H J; GORRES, D; LOHSCHIEDT, K

PA (THYS) THYSSEN AG

CYC 14

PI DE 3606804 A 19870910 (198737)\* 5p

EP 236823 A 19870916 (198737) DE

R: AT BE CH DE ES FR GB IT LI NL SE

JP 62290857 A 19871217 (198805)

US 4798631 A 19890117 (198906) 5p

DE 3606804 C 19890330 (198913)  
EP 236823 B 19910724 (199130)  
R: AT BE CH DE ES FR GB IT LI NL SE  
DE 3771526 G 19910829 (199136)  
JP 06060386 B2 19940810 (199430) C23C008-16  
KR 9403503 B1 19940423 (199605) C21D009-00  
ADT DE 3606804 A DE 1986-3606804 19860301; EP 236823 A EP 1987-102472  
19870221; JP 62290857 A JP 1987-44144 19870228; US 4798631 A US 1987-18545  
19870225; JP 06060386 B2 JP 1987-44144 19870228; KR 9403503 B1 KR  
1987-1778 19870228  
FDT JP 06060386 B2 Based on JP 62290857  
PRAI DE 1986-3606804 19860301  
REP 1.Jnl.Ref; A3...8821; EP 91526; No-SR.Pub; US 3027252; US 3298826; US  
4414023; 2.Jnl.Ref; EP 232793  
IC B01J023-00; B01J035-00; B22D011-06; C21D009-00;  
C22C019-05; C22C038-18; C23C008-16  
ICM C21D009-00; C23C008-16  
ICS B01J023-00; B01J035-00; C22C019-05; C22C038-18;  
C23C008-18; C30B029-62  
ICA B01J032-00; B22D011-06  
AB DE 3606804 A UPAB: 19930922  
A metallic semi-finished product, based on Fe and/or Ni and/or Co with  
2-16% Al, 12-30% and one or more highly reactive elements (esp. selected  
from rare earth metals and/or their dispersed oxides) has, at least in its  
surface region, columnar metallic crystals on which aluminium oxide and/or  
chromium oxide based columnar crystals are grown, the axes of both  
columnar crystal types being generally perpendicular to the geometrical  
surface of the semi-finished prod.  
Prod'n. of the finished prod involves solidification of the melt  
generally parallel to the geometric surface at 10 power 3 - 10 power 6  
deg.C/sec. and annealing at 800 - 1000 deg.C for up to 25 hrs. in air.  
Also claimed is use of the semi-finished product (a) as thermal cycling  
resistant substrate for a metallic or ceramic coating and (b) for  
catalysts.  
USE/ADVANTAGE - The semi-finished prod. may be wire, rod, tube, a  
billet or esp. sheet or strip, esp. for catalyst supports, carbon black  
filters, heat conductors aerosol filters and linings of chemical and  
energy conversion plants. The columnar crystals provide a large surface  
area for anchoring of metallic or ceramic coatings so that intermediate  
layers are not required.  
0/3  
FS CPI GMPI  
FA AB  
MC CPI: J01-H; J04-E03; M26-A01; M26-B08; M26-B08A; M26-B08C; M27-B04;  
M27-B04A; M27-B04C; N01-C; N02-A01; N02-B01; N02-C01; N03-D  
L54 ANSWER 38 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 1986-304844 [46] WPIX  
DNC C1986-132178  
TI Catalyst converter substrate for vehicle engine exhaust cleaning -  
comprising two smooth and one corrugated foil strips wound to define  
passageways and prevented from telescoping.  
DC H06 J04 Q51  
IN CARRIERE, R T; JALBING, J I  
PA (GENK) GENERAL MOTORS CORP  
CYC 9  
PI US 4619912 A 19861028 (198646)\* 5p  
EP 217493 A 19870408 (198714) EN  
R: DE FR GB IT  
AU 8660178 A 19870305 (198716)

JP 62058009 A 19870313 (198716)  
CA 1262714 A 19891107 (198949)  
KR 9000776 B 19900216 (199051)  
ADT US 4619912 A US 1985-771777 19850903; EP 217493 A EP 1986-305260 19860708;  
JP 62058009 A JP 1986-205027 19860830  
PRAI US 1985-771777 19850903  
REP No-citns.  
IC B01D053-28; B01J035-04; F01N003-28  
AB US 4619912 A UPAB: 19930922

A catalytic converter substrate is constructed of two smooth foil strips and one corrugated foil strip which are arranged and folded together so that alternate folds of each of the smooth strips have spaced sides and juxtaposed abutting sides and interleave with those of the other smooth foil strip. All the folds of the corrugated foil strip have spaced sides that sandwich the folds with juxtaposed abutting sides of both the smooth foil strips so as to define passages between them such that all the strips are retained together against telescoping by engaging the retaining means at the opposite ends of all of their folds while being foldable so as to conform to a prescribed cross-sectional profile, such as the low profile oval shape desired for underfloor vehicle use.

The folded foil strip substrate is retained by a sheet metal retainer pref. comprising a pair of identical shells which, together, exactly conform about their interior to the desired substrate cross-section profile whereas the free folded height of the thus combined strips is made oversize. A substantial compressive load is thus applied to the folded strips in a cross-wise direction by the clamping action of the retainer shells when they are forced together and edge welded. With such an assembly method, the folded strips are positively held in the desired cross-sectional profile and are also frictionally held together against telescoping by the retained compressive load. The retainer shells are also provided with an inwardly projecting flange at and about their opposite ends which extends over the ends of the folds to positively prevent any longitudinal movement between the foil strips and the retainer.

ADVANTAGE - The arrangement permits the use of whisker covered foil without requiring welding together of the foil layers and the resulting containerised preloaded whisker-covered metal substrate need only be coated with a suitable catalyst

0/4

FS CPI GMPI

FA AB

MC CPI: H06-C03; J04-E02

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L54 ANSWER 39 OF 48 HCAPLUS COPYRIGHT 2002 ACS  
AN 1985:225368 HCAPLUS  
DN 102:225368  
TI Kerosine burners with combustion gas treating device  
PA Matsushita Electric Industrial Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM F23G007-06  
ICS B01D053-34  
ICA B01D053-36  
CC 59-6 (Air Pollution and Industrial Hygiene)  
Section cross-reference(s): 51

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60042509	A2	19850306	JP 1983-151239	19830818

AB A kerosine burner has a combustion gas treating device which is a 2 layered catalytic filter. The filter consists of a Pt- or Pd-coated Al<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, or TiO<sub>2</sub> substrate on the flame side, and a metal oxide coated substrate on the outside. The metal oxide is an oxide of Mn, Co, Na, K, Mg, Ca, or Ba. Thus, SiO<sub>2</sub> cloth was immersed in solns. contg. nitrate of the metals, and dried and calcined at 550.degree. for 1 h. A combustion gas treating device was prepd. with a Pt/SiO<sub>2</sub> cloth and a metal oxide/SiO<sub>2</sub> cloth (3 layers). The device collected 70-85% of the S compd. and CO conversion was 91.5-93.5%.

ST kerosine burner catalyst

IT Combustion catalysts  
(for kerosine burner combustion gas treatment)

IT Combustion gases  
(from kerosine burner, catalyst-filter unit for)

IT 1304-28-5, uses and miscellaneous 1305-78-8, uses and miscellaneous 1308-04-9 1309-48-4, uses and miscellaneous 1313-13-9, uses and miscellaneous 1313-59-3, uses and miscellaneous 7440-05-3, uses and miscellaneous 7440-06-4, uses and miscellaneous 12136-45-7, uses and miscellaneous  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for kerosine burner combustion gas treatment)

IT 630-08-0, reactions  
RL: RCT (Reactant)  
(conversion of, in kerosine burner combustion gas, catalyst filter for)

IT 7704-34-9D, compds.  
RL: REM (Removal or disposal); PROC (Process)  
(removal of, from kerosine burner combustion gas, catalytic filter for)

L54 ANSWER 40 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1985:197194 HCAPLUS

DN 102:197194

TI Gas sensors

PA Hitachi, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G01N027-12

ICS G01N027-16

CC 79-2 (Inorganic Analytical Chemistry)

Section cross-reference(s): 80

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60029651	A2	19850215	JP 1983-135835	19830727
AB	Gas sensors having plural sensors, some sensor bodies (composed of a single material) and oxide catalyst coating layers (having catalytic activities owing to kinds of gases) were formed on an insulating support. The sensors are highly selective to specific gases. Thus, an Al <sub>2</sub> O <sub>3</sub> support having a Pt electrode was coated with a compn. contg. WO <sub>3</sub> 90, PbO.TiO <sub>2</sub> .SiO <sub>2</sub> glass power 10 wt.%, and nitrocellulose-.alpha.-terpineol, then coated with Pt paste (for electrode) and dried to form 4 sensor bodies. ZnO-SnO <sub>2</sub> 3:7, Cr <sub>2</sub> O <sub>3</sub> -Co <sub>2</sub> O <sub>3</sub> 7:3, MnO <sub>2</sub> -Cr <sub>2</sub> O <sub>3</sub> 5:5, and ZnO-SnO <sub>2</sub> 7:3 catalysts were coated thereon resp. to give an accumulated gas sensor. The gas sensor showed high sensitivity to CH <sub>4</sub> , CO, H <sub>2</sub> , and gaseous alcs.				
ST	gas sensor; methane sensor; hydrogen sensor; carbon monoxide sensor; alc gas sensor; oxide catalyst gas sensor				
IT	Alcohols, analysis				

RL: ANST (Analytical study)  
(detn. of gaseous, sensors for)  
IT Catalysts and Catalysis  
(metal-oxide, in gas sensors)  
IT Gas analysis  
(sensors for)  
IT Glass, oxide  
RL: ANST (Analytical study)  
(powd., gas sensors contg.)  
IT 1314-13-2, uses and miscellaneous 18282-10-5  
RL: CAT (Catalyst use); USES (Uses)  
(as catalyst, in gas sensors)  
IT 1308-04-9 1308-38-9, uses and miscellaneous 1313-13-9, uses  
and miscellaneous  
RL: CAT (Catalyst use); USES (Uses)  
(as catalysts, in gas sensors)  
IT 7440-06-4, uses and miscellaneous  
RL: USES (Uses)  
(electrode, in gas sensors)  
IT 1314-35-8, uses and miscellaneous  
RL: USES (Uses)  
(gas sensors contg.)  
IT 9004-70-0D, reaction products with terpineol 10482-56-1D, reaction  
products with nitrocellulose  
RL: ANST (Analytical study)  
(in fabrication of gas sensors)  
IT 13463-67-7, uses and miscellaneous  
RL: USES (Uses)  
(powd. glass contg., in gas sensors)

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L54 ANSWER 41 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 1985-169080 [28] WPIX  
DNN N1991-054558 DNC C1991-122940  
TI Powdered or sintered alpha iron oxide body - contg. at  
least 1 titanium or tin element, used for photo-conversion element.  
DC E36 J04 L03 S03  
PA (AGEN) AGENCY OF IND SCI & TECHNOLOGY  
CYC 1  
PI JP 60099341 A 19850603 (198528)\* 4p  
JP 03046421 B 19910716 (199132)  
ADT JP 60099341 A JP 1983-206313 19831102; JP 03046421 B JP 1983-206313  
19831102  
PRAI JP 1983-206313 19831102  
IC B01J019-12; B01J023-74; C01B003-04; G01J001-02;  
G01N027-12  
AB JP 60099341 A UPAB: 19930925  
Body contains at least one element of Ti, Sn and is used  
for photo-conversion element (e.g., a photo-sensor, gas sensor) or a  
catalyst (e.g., carrier, photo-catalyst).  
ADVANTAGE - The powdery or sintered alpha-Fe<sub>2</sub>O<sub>3</sub> body  
absorbs visible light of 550 nm or lower. The sintered alpha-Fe<sub>2</sub>O<sub>3</sub>  
body shows high conductivity and is low cost.  
In an example, a photo-cell constituted of a type-n, alpha-  
Fe<sub>2</sub>O<sub>3</sub> (5% SnO<sub>2</sub>), semiconductor sintered electrode,  
Pt electrode and H<sub>2</sub>SO<sub>4</sub> electrolyte showed max. volt of 0.6 V on  
photo-irradiation. Its conversion efficiency is further enhanced by  
coating the sintered body with SnO<sub>2</sub>, ITO, Si<sub>3</sub>N<sub>4</sub>.  
3/4  
FS CPI EPI  
FA AB

MC CPI: E35-H; E35-K; E35-U; J04-E04; L03-B01A  
EPI: S03-A01; S03-E02A

L54 ANSWER 42 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1984:503250 HCAPLUS

DN 101:103250

TI Carbon monoxide gas detecting device and circuit for driving it

IN Masaki, Katsura; Masayuki, Shiratori

PA Toshiba Corp., Japan

SO Eur. Pat. Appl., 48 pp.

CODEN: EPXXDW

DT Patent

LA English

IC G01N027-12

CC 79-2 (Inorganic Analytical Chemistry)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 102067	A2	19840307	EP 1983-108418	19830826
	EP 102067	A3	19850424		
	R: DE, FR, GB, NL				
	JP 59038641	A2	19840302	JP 1982-147788	19820827
	JP 59099244	A2	19840607	JP 1982-208480	19821130
	JP 05031104	B4	19930511		
	US 4792433	A	19881220	US 1986-903839	19860904
PRAI	JP 1982-147788		19820827		
	JP 1982-208480		19821130		
	US 1983-525485		19830822		

AB A CO gas detecting device comprises a CO gas sensor provided with a gas sensitive member made of SnO<sub>2</sub>, ZnO, Fe<sub>2</sub>O<sub>3</sub> or the like, a pair of electrodes provided on this gas sensitive member, and a catalyst layer comprising at least one kind of catalyst metals of Pt, Pd, and Rh and at least one kind of carriers of Al<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, and SiO<sub>2</sub>, provided on the gas sensitive member; and a ref. sensor substantially without sensitivity to CO gas provided with a gas sensitive member similar to the above gas sensitive member, a pair of electrodes provided on the gas sensitive member, and a catalyst layer comprising Ag and at least one kind of carriers of Al<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, and SiO<sub>2</sub>, provided on the gas sensitive member. Also disclosed is a circuit for driving the device.

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ST carbon monoxide semiconductor detector; elec circuit semiconductor detector carbon oxide

IT Electric resistance  
(detn. of, semiconductor device for, for carbon monoxide detection)

IT Electric circuits  
(for metal oxide semiconductor device for carbon monoxide detection)

IT Semiconductor devices  
(metal oxide, for carbon monoxide detection)

IT 64-17-5, uses and miscellaneous 74-82-8, uses and miscellaneous  
74-98-6, uses and miscellaneous 1333-74-0, uses and miscellaneous  
RL: USES (Uses)  
(carbon monoxide semiconductor detection device sensitivity to)

IT 630-08-0, analysis  
RL: ANT (Analyte); ANST (Analytical study)  
(detn. of, metal oxide probe for)

IT 1314-23-4, uses and miscellaneous 1344-28-1, uses and miscellaneous  
7440-05-3, uses and miscellaneous 7440-06-4, uses and  
miscellaneous 7440-16-6, uses and miscellaneous 7440-22-4, uses and  
miscellaneous 7631-86-9, uses and miscellaneous



RL: USES (Uses)

(in catalytic layers in metal oxide semiconductor device for carbon monoxide detection)

IT 18282-10-5 1309-37-1, uses and miscellaneous  
1314-13-2, uses and miscellaneous 7440-03-1, uses and miscellaneous  
7440-36-0, uses and miscellaneous

RL: ANST (Analytical study)

(in metal oxide semiconductor device for carbon monoxide detection)

L54 ANSWER 43 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 1982-77197E [37] WPIX  
TI Continuous prodn. of plate-shaped catalyst - by shaping expanded metal plate having metal coating which receives catalyst material.  
DC E36 J04 P52 P56 Q51  
IN ISHIDA, N; MIYAKE, K; NAGASHIMA, T  
PA (HITG) BABCOCK-HITACHI KK  
CYC 4  
PI GB 2094170 A 19820915 (198237)\* 11p  
DE 3208634 A 19820923 (198239)  
GB 2094170 B 19840912 (198437)  
US 4567630 A 19860204 (198608)  
DE 3208634 C 19870827 (198734)  
KR 8700844 B 19870425 (198741)  
ADT GB 2094170 A GB 1982-6829 19820309; DE 3208634 A DE 1982-3208634 19820310;  
US 4567630 A US 1984-615275 19840530  
PRAI JP 1981-33174 19810310  
IC B01D053-36; B01J035-04; B01J037-00; B21D031-02;  
B21D053-00; B23P017-00; F01N003-28  
AB GB 2094170 A UPAB: 19930915  
Catalyst plates are continuously produced by forming slits in a widthwise direction in a thin metal plate and expanding the plate in a direction perpendicular to the slits to form an expanded mesh-like plate. After degreasing the plate, molten metal is sprayed onto it to form roughened surfaces to which a catalytic substance is applied. The plate is then shaped and sheared into pieces.  
Used for mass prodn. of catalysts for denitration of exhaust gases. Distortions of the expanded metal plate due to differences between meshes in opening degree can be continuously corrected to provide catalyst plates uniform in material quantity.  
FS CPI GMPI  
FA AB

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MC CPI: E31-H01; J01-E02D; J04-E04; N06-E

L54 ANSWER 44 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 1981-34395D [20] WPIX  
TI Platinum gp. metal recovery from ceramic substrates -  
by heating with flux and collector material e.g. in plasma furnace.  
DC J04 M25  
IN DAY, J G  
PA (JOHO) JOHNSON MATTHEY CO LTD  
CYC 8  
PI BE 886894 A 19810416 (198120)\*  
GB 2067599 A 19810730 (198131)  
FR 2472617 A 19810703 (198134)  
DE 3047194 A 19810917 (198139)  
JP 56112427 A 19810904 (198142)  
ZA 8007646 A 19811021 (198212)  
US 4428768 A 19840131 (198407)  
CA 1162054 A 19840214 (198412)  
GB 2067599 B 19841107 (198445)

US 4428768 B 19871208 (198751)  
DE 3047194 C 19880721 (198829)  
JP 63066885 B 19881222 (198904)  
ADT GB 2067599 A GB 1980-39290 19801208; DE 3047194 A DE 1980-3047194  
19801215; JP 56112427 A JP 1980-182947 19801225; US 4428768 A US  
1980-214267 19801208  
PRAI GB 1979-44656 19791231; GB 1980-39290 19801208  
IC B01J023-96; C01G055-00; C22B004-00; C22B007-00; C22B011-02  
AB BE 886894 A UPAB: 19930915

Platinum group metals are recovered from aluminium silicate-  
and/or alumina-contg. ceramic **substrates** by (a) forming a  
particulate charge of the **substrate** material contg. **Pt**  
gp. metals, one or more fluxes and a collector material or its precursor;  
(b) heating to at least 1420 deg.C to obtain a molten metal phase contg.  
most of the **Pt** gp. metal and a molten slag phase contg. the  
flux(es), the ceramic material and the rest of the metal; (c) sepg. the  
two phases; and (d) sepg. the **Pt** gp. metals from the metal  
phase.

The method can be used to recover **Pt** gp. metals from  
catalysts, e.g. reforming catalysts or automobile exhaust gas treatment  
catalysts. The use of high temps., e.g. using an electric arc or plasma  
furnace, allows the **substrate** to be dissolved in the slag  
without using an excessive amt. of flux.

FS CPI  
FA AB  
MC CPI: J04-E05; M25-F; M25-G20

L54 ANSWER 45 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 1979-11168B [06] WPIX  
TI Catalyst compsn., used in IC engine exhaust gas purificn. - comprises  
lightweight, refractory, monolithic, honeycomb carrier  
impregnated with heavy metal oxide-alumina mixt. and **palladium**.  
DC H06 Q51  
PA (JAPC) NIPPON SHOKUBAI KAGAKU KOGYO CO LTD  
CYC 1  
PI JP 53149886 A 19781227 (197906)\*  
PRAI JP 1971-77150 19711004; JP 1978-19622 19770603  
IC B01D053-34; B01J023-44; B01J037-02; F01N003-15  
AB JP 53149886 A UPAB: 19930901

A refractory monolithic honeycomb of **carrier** having an apparent  
specific gravity of 0.2-0.7 g./cm.3 and gas permeative passage in an amt.  
of 25 to 300 pieces per sq. in. of cross-sectional area is used as a  
support for the catalyst. Then, (gamma)-alumina and/or (rho)-alumina and  
active alumina is mixed with heavy metal oxide(s) (e.g. copper oxide,  
nickel oxide, **iron oxide**, **manganese**  
**oxide**, zinc oxide, **tin oxide**, bismuth oxide,  
silver oxide and/or cerium oxide) in a wt. ratio of alumina to the heavy  
metal oxide of 0.2-0.3. The **carrier** is **coated**  
and impregnated with the mixt. in an amt. of 130-500 g. per litre of  
calcined dried catalyst system to an average thickness of 50-300 mu. The  
obtd. catalyst system is additionally impregnated with **palladium**  
in an amt. of 0.2-2.0 g. per l. of the finished catalyst system.

The refractory **carrier** has numerous gas permeative  
passages, low density and is prepd. from Cordierite, alumina silicate  
having lithium content, magnesium silicate, zirconium cpd., silicon  
carbide or (alpha)-alumina. The honeycomb type of catalyst system can be  
used to oxidise carbon monoxide in car exhaust gas to carbon dioxide.

FS CPI GMPI  
FA AB  
MC CPI: H06-C03A; N01; N02; N03

L54 ANSWER 46 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD

AN 1977-77862Y [44] WPIX

TI Catalysts for purification of exhaust gases - comprises ferrous alloy substrate coated with protective and catalytic layers.

DC H06 M27 Q51

PA (UKAT) UK ATOMIC ENERGY AUTHORITY

CYC 7

PI DE 2716566 A 19771027 (197744)\*

SE 7704236 A 19771107 (197747)

JP 52126692 A 19771024 (197748)

FR 2347976 A 19771216 (197806)

US 4096095 A 19780620 (197833)

GB 1568391 A 19800529 (198022)

IT 1082748 B 19850521 (198615)

PRAI GB 1976-15406 19760414

IC B01D053-36; B01J021-04; B01J023-76; B01J035-02  
; F01N003-15

AB DE 2716566 A UPAB: 19930901

Catalysts consist of (1) a ferrous alloy substrate contg. Al, (2) an adherent protective coating of a refractory oxide together with an oxide of a metal (other than Fe) from the first period of transition elements, the oxide being different from the refractory oxide, and (3) a second coating of catalytic material together with a refractory oxide.

Pref. (1) consists of an alloy of 20% Cr, 0.5-12% Al, <=3% Y and remainder Fe. (2) is Al2O3 with Cr2O3 and (3) is Al2O3 with a Pt-gp. metal.

The catalyst is used for purificn. of exhaust gases, esp. from vehicles, by oxidn. of CO and hydrocarbons, and redn. of nitrogen oxides. Catalytic activity is retained over long periods of severe working conditions. The protective layer (2) sealing off the substrate and preventing poisoning of th catalyst by diffusion.

FS CPI GMPI

FA AB

MC CPI: H06-C03; M13-H02; M13-H04; M27-A; N01-C; N02-A; N02-F02; N03-A; N03-D

L54 ANSWER 47 OF 48 HCAPLUS COPYRIGHT 2002 ACS

AN 1974:87094 HCAPLUS

DN 80:87094

TI Catalysts for the detoxication of automotive exhaust gases

IN Foster, Gordon F.; Meissner, Helmuth E.; Stiles, Janice L.

PA Corning Glass Works

SO Ger. Offen., 15 pp.

CODEN: GWXXBX

DT Patent

LA German

IC B01J

CC 59-2 (Air Pollution and Industrial Hygiene)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2319277	A1	19731122	DE 1973-2319277	19730417
	US 3887740	A	19750603	US 1972-249353	19720501
	FR 2182954	A1	19731214	FR 1973-13088	19730411
	GB 1430952	A	19760407	GB 1973-18741	19730418
	JP 49048529	A2	19740510	JP 1973-46823	19730426

PRAI US 1972-249353 19720501

AB The catalysts are made by depositing Al2O3-Mn3O4, SnO2, or

Al<sub>2</sub>O<sub>3</sub>TiO<sub>2</sub> supporting layers on monolithic cordierite or  
spodumene supports and coating with Pt or Cr oxide  
catalyst layers. Thus, a cordierite cylinder was  
immersed 10 min in a soln. contg. 25.08 g 50% Al(NO<sub>3</sub>)<sub>3</sub>·9H<sub>2</sub>O and 12.38 g  
50% Mn (NO<sub>3</sub>)<sub>2</sub> and then 10 min in concd. NH<sub>4</sub>OH to give hydrated oxide  
layers. The monolith was immersed 24 hr in dil. NH<sub>4</sub>OH, 24hr in a  
Pt complex soln., heated 1hr at 300.degree. in vacuo, 1hr in 90:10  
(vol.%) N-H mixt. and 24 hr at 800.degree. in air. A simulated exhaust  
gas contg. 250 ppm propylene, CO 1, O 1.25, steam 10%, and balance N was  
passed at 15,000 hr<sup>-1</sup> over the above catalyst to give 50% CO conversion  
and 50% propylene conversion at 485 and 570.degree.F, resp.

ST platinum catalyst detoxication gas; chromium oxide catalyst;  
manganese oxide catalyst; exhaust gas detoxication  
catalyst

IT Combustion catalysts  
(chromium oxide and platinum, for exhaust)

IT Exhaust gases  
(combustion of, chromium oxide and platinum catalysts for)

IT 1302-37-0 1317-35-7 12182-53-5 13463-67-7, uses and  
miscellaneous 18282-10-5  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts supports, for combustion of exhaust)

IT 7440-06-4, uses and miscellaneous 11118-57-3  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for combustion of exhaust)

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L54 ANSWER 48 OF 48 WPIX COPYRIGHT 2002 DERWENT INFORMATION LTD  
AN 1973-743790 [49] WPIX  
TI Metal oxide coated porous carriers - as catalyst substrates for ic engine  
exhaust gases purifn.  
DC H06 P78 Q51  
PA (CORG) CORNING GLASS WORKS  
CYC 5  
PI DE 2319277 A (197349)\*  
FR 2182954 A 19740118 (197406)  
JP 49048529 A 19740510 (197428)  
US 3887740 A 19750603 (197524)  
GB 1430952 A 19760407 (197615)  
PRAI US 1972-249353 19720501  
IC B01D053-34; B01J011-00; B01J037-02; B44D001-44;  
E01N003-14

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AB DE 2319277 A UPAB: 19930831  
Porous carrier (pref. a refractory ceramic material in the honeycomb form)  
is impregnated with an aq. soln. of an ionic cpd. of a metal(s); then a  
hydrated oxide of the metal(s) is deposited on the carrier by means of an  
aq. ammonia or ammonium carbonate soln., or gaseous ammonia. The deposit  
is subsequently heated at a moderate temp. to expel water (excessive  
heating would reduce the surface area of the deposit). Metal oxide  
layers (pref. oxides of Al, Ti, Sn, Zr, Th, Cr, Mn or Fe) firmly  
adhering to the carrier and having large surface area are formed without  
any binder. The catalyst itself (e.g. Pt) is pref. introduced before  
drying the hydrated oxide layer.

FS CPI GMPI  
FA AB  
MC CPI: H06-C01